

THE
GUIDE TO KNOWLEDGE,
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AUTHOR OF "PINNOCK'S CATECHISMS," "GRAMMAR OF GEOGRAPHY AND HISTORY," ETC. ETC.

No. I.]

SATURDAY, JULY 7, 1832.

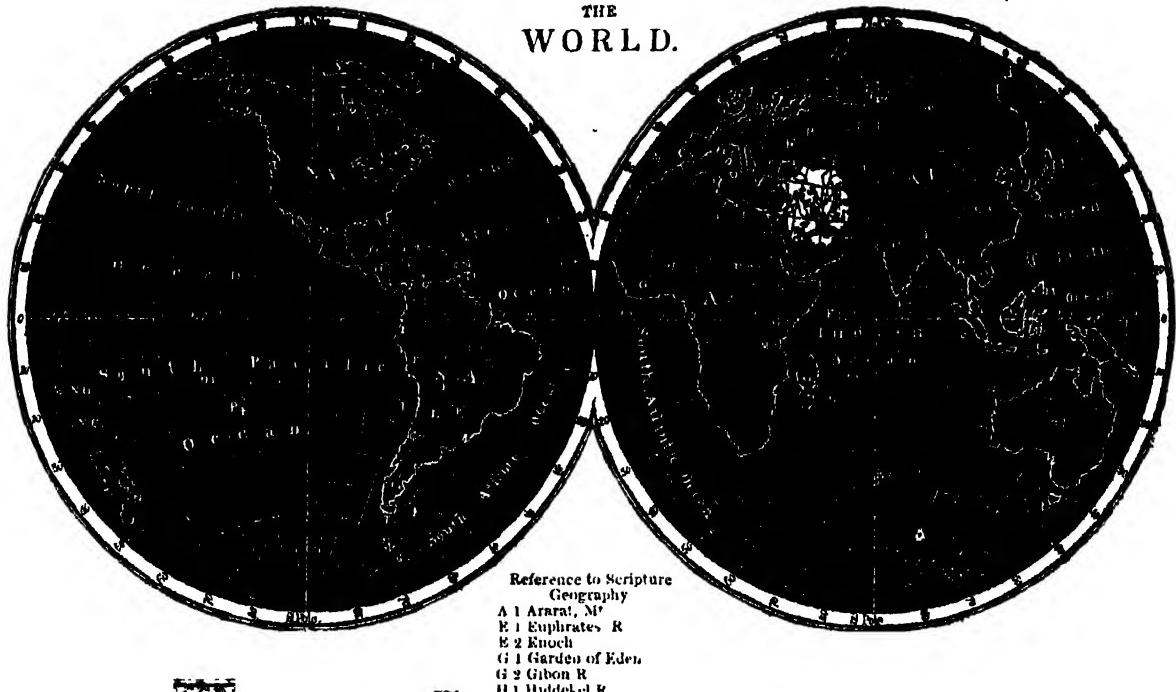
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GEOGRAPHY AND HISTORY OF THE WORLD, AND OF THE ORIGIN OF NATIONS.

WESTERN HEMISPHERE.

THE
WORLD.

EASTERN HEMISPHERE.



INTRODUCTION.

AMONG all the sciences, there is not one more interesting and essential than that of GEOGRAPHY; for without a knowledge of GEOGRAPHY, no person can appear in SOCIETY with respectability, or read even a *daily NEWSPAPER* with profit.

GEOGRAPHY is a description of the EARTH.—In every Geographical description, two things are to be considered; namely, the *form* of the EARTH, and its *position* in the HEAVENS.

The materials of the description are surveys and astronomical observations, whereby the properties of places are determined.

The properties of places are either terrestrial or celestial. The terrestrial properties are figure, dimension, and situation. The *celestial* properties are the rising and setting of the stars, the vicissitudes of day and night, the variety of the seasons, and other phenomena.

The manner of describing the EARTH is *two-fold*; namely, by a MAP or a GLOBE, and by *Explanation* or *Treatise*. The natural figure of the EARTH is that of a GLOBE, from which it differs only in size; so that the GLOBE may properly be called the EARTH in miniature.

The MAP of the WORLD, which is given above, has a two-fold object; it represents the WORLD as known before the DELUGE, and as it is known at the present time.

The HISTORY of the WORLD before the FLOOD is very short, and principally confined to the "*Creation of the World*," and the *FALL* of the first PARENTS of MANKIND. All that we know of this period is to be found in the BIBLE; for what is found in PROPHETIC WRITERS, is little more than a confused heap of palpable absurdities.

It may, however, be gathered from the writings of MOSES, that the WORLD before the FLOOD was very populous, and the manners of the inhabitants extremely licentious. The length of their lives was remarkable; but whether the ARTS and LETTERS flourished among them cannot now be known.

It is, however, imagined, that they excelled in AGRICULTURE, and had made a very considerable progress in the study of NATURE.

The only places that are described by MOSES, as existing before the Flood, are the TERRESTRIAL PARADISE, or GARDEN of EDEN; the LAND OF NOD, and MOUNT ARARAT.

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The situation of the GARDEN OF EDEN, however, where our first parents were placed, has been much disputed; the most probable theory is that it was seated between the Euphrates or Fison, and the Tigris or Gilson rivers, north-west of the Persian Gulf, a little south of the present Bassorah.

Authors that have treated this subject with the best reputation, are HUST, BOCHART, CALMET, and WELLS.

The first city built upon the EARTH was ENOCH, the founder of which was CAIN; but nothing certain is known of its site, further than it was situated north-east of the GARDEN OF EDEN, supposed to have been in or near latitude 32° N.; and longitude 49° E., about midway between it and the present ISPAHAN.

In settling the CHRONOLOGY of this *first age* of the WORLD, the only authority upon which we can rely, is that of MOSES.

The first profane writer who wrote a History of the Ante-diluvian World, was SANCHONIATHON, a Phoenician, who also wrote a complete History of the PHOENICIANS.

Berosus, a Chaldean, who lived in the days of ALEXANDER THE GREAT, is said, also, to have written a History from the CREATION of the World, and to have divided the series of the Chaldean Kings, before the Flood, into ten generations. According to his method of counting, his Chronology comes very near to that of MOSES.

KEY.

EASTERN HEMISPHERE.

E.—EUROPE.

A Austria	I 1 Italy	S 2 Switzerland
B British Isles	I 2 Iceland	S 3 Sardinia
C Corsica	N Nova Zembla	S 4 Spain
D Denmark	P 1 Portugal	S 5 Sicily
F France	P 2 Prussia	S 6 Spitzbergen
G German States, &c.	S 1 Sweden & Norway	T Turkey

A 1.—ASIA.

A 1 Australia	J 1 Japan	P 3 Philippine Isles
A 2 Arabia	J 2 Java	R Russia
B 1 Birman Empire	K 1 Kamtschaka	S 1 Siam
B 2 Borneo	K 2 Kerguelan's Land	S 2 Sumatra
C 1 China (Proper)	M 1 Mongolia	T 1 Turkey
C 2 Cochin China	M 2 Malaya	T 2 Tartary
C 3 Ceylon	M 3 Mindanao	T 3 Tibet
C 4 Cabul	N G New Guinea	T 4 Timor
E 5 Celebes	P 2 Persia	V Van Dieman's Land
H Hindostan		

A 2.—AFRICA.

A 1 Algiers	F Fezzan	M 6 Madeira Islands
A 2 Abyssinia	G Guinea	S 1 Soudan
B 1 Baqca	H Houss	S 2 Senear
B 2 Bornou	K Kordofan	S 3 St. Helena
C 1 Congo	M 1 Morocco	T 1 Tunis
C 2 Cape of Good Hope	M 2 Mozambique	T 2 Tripoli
C 3 Canary Islands	M 3 Mocaranga	T 3 Timbuctoo
D Darfur	M 4 Madagascar	
E Egypt	M 5 Mauritius	

WESTERN HEMISPHERE.

N. A.—NORTH AMERICA.

B 1 British Posses- sions	G 2 Guatemala	R Russian Posse- sions
B 2 Bermudas	J 1 Jamaica	S St. Domingo
C 1 Canada	M 1 Mexico	U United States
C 2 Cuba	M 2 Martinique	
G 1 Greenland	N Newfoundland	
	P Porto Rico	

S. A.—SOUTH AMERICA.

B 1 Brazil	G Guiana	P 1 Peru
B 2 Bolivia	J Juan Fernandes	P 2 Paraguay
C 1 Columbia	L La Plata	P 3 Paraguay
C 2 Chili	N S New South Shet- land Islands	T 1 Trinidad
F Falkland Islands		T 2 Terra del Fuego

ASIATIC PART.

K Kamtschaka	N H New Hebrides	P 4 Pitcairn Islands
N New Zealand	O 1 Otaheite	R Russia
N C New Caledonia	O 2 Owhyhee	

AFRICAN PART.

A 3 Azores Islands	C 4 Cape Verd Islands.
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ADDRESS.

At the time when the value of KNOWLEDGE is so very generally admitted, to attempt to prove so obvious a truth by much argument, would naturally appear superfluous; but, happily, there are not many to be found, in the present day, who are so ignorant, as not to be apprized of its inestimable worth.

The design of this work is to call the attention of mankind to those objects most worthy of their regard, and to shew what branches of KNOWLEDGE are the most useful, and what are merely ornamental; at the same time, to give a brief, but comprehensive view of the whole, and to point out the best and the most ready means of attaining them.

The EDITOR is well aware that several works of a similar form and price, and admirably conducted, are in course of publication, the end of which is to diffuse general information. His intention, however, is to go more extensively into the same beneficial pursuit; but by a new, direct, and more certain road, one which is left unexplored.

To explore the regions of KNOWLEDGE, then, it will be our PLAN, to set out by a consideration of the first *fruitful TREE* that we may meet with in the journey; and before collecting its fruit, to inquire into its history, to learn its origin, its progress, and its uses: hence, the STUDENT will be led to commence at the bottom of the TREE, to climb upwards, and to gather the fruit as he proceeds, as a deserved reward of his labours.

It must be remembered, that EDUCATION, in all the branches of ART, should be made analogous to the gradual and direct process of NATURE, as in rearing the *germ* of the ACORN throughout its advances until it becomes the majestic OAK. In like manner, it should be made to resemble the work of the BUILDER, who begins at the foundation of the STRUCTURE; who makes each *course* of STONES or BRICK, to answer the double purpose of filling its own proper station in the BUILDING, and of preparing directly and immediately for the next course.

If we have not wholly misunderstood the dictates of PHILOSOPHY, this gradual, direct, and constant progress should appear in all works like the present, thus expressly dedicated to the purposes of INSTRUCTION.

To begin, then, with the foundation, and, of course, with that which is most essential to the STRUCTURE we would raise, we want a *primary GUIDE*, containing the principles of general science, written in such a manner, and with such observations and remarks, as may form a KEY to the whole. With this preparation,

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the Reader would go on with ease and pleasure to himself, without the assistance of any other GUIDE, than the work before him.

"As there are many branches of KNOWLEDGE, some of which are easy, and others difficult of attainment, the easier should be acquired first; by this course, the difficulty of the latter will be considerably diminished, as the faculties will become more and more capable and vigorous by their gradual exertions. If the contrary course be adopted, the mind will be embarrassed, and the attainment of KNOWLEDGE will be rendered no less irksome than limited. By following up the PLAN here proposed, the "ROAD to KNOWLEDGE" will be as easy, as the END will be profitable and delightful.

Uneducated reason may be likened to gold hidden in the MINE, which is of no use until brought to light; when, being formed for circulation, it becomes, not only useful to its possessor, but universally beneficial.

So it is with the MIND of MAN, as long as it remains uncultivated; but, when it is expanded by EDUCATION, it imbibes KNOWLEDGE, which, by general diffusion, is rendered useful as GOLD, for thereby MAN becomes civilized, the inlets to happiness are opened, and SOCIETY is formed on a firm, advantageous, and lasting basis.

Most persons are capable of acquiring all the KNOWLEDGE they may reasonably desire; and those who shall pay attention to the instructions which will be furnished in this work, will readily accomplish so desirable an object: and as the present is not an age for indulging IGNORANCE, we hope our advice will be well received, and, that "THE GUIDE TO KNOWLEDGE" will prove beneficial.

He who feels envious of procuring for himself that becoming distinction in SOCIETY which, in the present age, can alone be obtained by mental superiority, must use commensurate means to the attainment thereof, which will depend principally upon his own exertions.

It may not be improper to observe here, that there exists more useful and real KNOWLEDGE among the middling classes of SOCIETY, at the present day, than could have been met with, some few ages ago, in the universities. For the greater part of the KNOWLEDGE of those times consisted in subtle distinctions, laborious disquisitions, and endless disputes about words, rather than things. The great diffusion of KNOWLEDGE, which we observe at present among all ranks in SOCIETY, first took its rise from the publishing those admirable ESSAYS—"The SPECTATOR," "The TATLER," and "The GUARDIAN;" in which learned subjects, instead of being written in LATIN, were presented in ENGLISH, in such a familiar style, as people of plain common sense might readily comprehend.

Nothing constitutes a greater disparity between one being and another, than different degrees of "KNOWLEDGE." The MIND of the uneducated is almost an absolute void; such are, for the most part, wrong-headed, extremely obstinate, and very similar to brutes; while that of a wise MAN is a Magazine richly stored with important truths, which serve to conduct him through the mazes of a difficult life to a glorious and happy END. But all endowments and acquisitions must have a beginning, and KNOWLEDGE must be gained progressively, in proportion as the MIND is capable of receiving it. Time was when SIR ISAAC NEWTON did not know the letters of the ALPHABET; and the time may possibly come, when the meanest of our READERS, if he make a proper use of his natural abilities, and study to gain KNOWLEDGE, may arrive at an equal degree of eminence with that great Philosopher.

If we look back upon times past, or if we take a view of the present state of the world, nothing so fills the imagination, or engages the attention, as the conspicuous and illustrious honours of KNOWLEDGE and LEARNING.

The ancient EGYPTIANS, the fathers of wisdom:—the ATHENIANS, learned and accomplished cultivators of every elegant ART;—the wise ROMANS, the zealous imitators of enlightened GREEKS;—How came these nations to shine like constellations through the depths of that universal mist which involved the rest of antiquity?—*By the attainment of KNOWLEDGE.*

How came the PYTHAGORES, the PLATOS, the ARISTOTLES, the XENOPHONS, the LIVYS, to appear as conspicuously in the page of history, as do stars of the first magnitude in the vast fields of ether?—*By the attainment of KNOWLEDGE.*

What makes this country to differ so much from the aspect it had when JULIUS CESAR landed on its coast, and found us a horde of painted savages, roaming naked through the woods?—*The attainment of KNOWLEDGE.*

How does it happen, that the NEGROES of AFRICA, and the wild INDIANS of AMERICA, live in brutal obscurity and ferocious discord?—*FROM THE WANT of KNOWLEDGE?*

But we must observe, that LEARNING and KNOWLEDGE cannot be acquired by committing a few scraps of good things to memory, nor be gained by the light reading of any work that does not contain the first principles of the science on which it treats.

But to attain "KNOWLEDGE," we must habituate ourselves to examine, reflect, compare, and view, in every light, all kinds of objects worthy of consideration.

As a knowledge of the world is absolutely necessary, and of the utmost importance to every individual, we purpose, in the course of our work, to give a full description of every part of the GLOBE, and of all things, animate and inanimate, thereon, which are worthy of observation. We will lead our READERS from one country to another, from city to city, and from town to town; describe their ancient and present state, the buildings with which they are adorned, the monuments of antiquity for which they are remarkable, and the religion, manners, and customs of their inhabitants; their manufactures, and the trade they have with other nations. We will conduct them to the MUSEUMS of the curious, and display the works of ancient and modern ART, together with the various productions of NATURE, there collected from all parts of the WORLD.

BIOGRAPHY will also obtain a conspicuous place in our work. We will endeavour to place the actions of great and virtuous men in the most striking point of view, in order to excite the rising generation to imitate their examples; the surest method of inducing youth to become an honour to their country, and worthy members of SOCIETY.

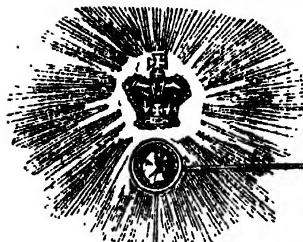
It is impossible, in an announcement like this, to enumerate every particular we design for our pages; but what we have already mentioned, it is hoped, will be sufficient to afford the READER some idea of what may be expected in the numbers of "THE GUIDE TO KNOWLEDGE."

It is intended that this work shall be published early every Saturday morning, in such portions, that its READERS, by employing a few leisure hours, may easily peruse, and make themselves masters thereof, before the publication of the succeeding number.

In the course of a year, these numbers will form a very handsome volume, which may be bound up, and referred to at all times for AMUSEMENT and INSTRUCTION. Hence, it may be deservedly considered as a cheap and invaluable "FAMILY LIBRARY," containing a mass of USEFUL INFORMATION, which, duly considered cannot fail to advance the interests, and augment the happiness, of those to whom it is addressed.

OF THE ADVANTAGES OF EDUCATION.

1. ROYALTY



MEANS AND INFLUENCE GREAT.

2. NOBILITY :



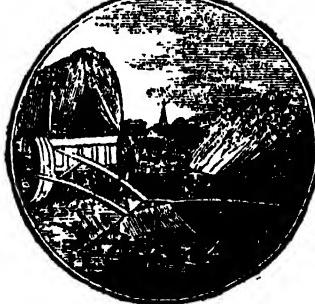
TIME AND MEANS GREAT.

3. GENTLEMEN AND
MERCHANTS . . . }

TIME AND MEANS LESS.

4. TRADESMEN AND
MECHANICS . . . }{ TIME AND MEANS MUCH LESS
THAN THE PRECEDING.

5. PEASANTRY, &c. &c

{ TIME AND MEANS SCARCELY
ANY, OR NONE.

The subject that deserves our first consideration, and utmost attention, is the improvement of the *human mind*,—by EDUCATION. But as the “FIELD OF LEARNING” is so very extensive, the object of it of so much importance, the lights in which it may be viewed so various, and the METHODS by which INSTRUCTION can be given, so numerous, it requires such a SYSTEM as shall meet the advanced state of the TIMES, so as to prove equally beneficial to all ranks of SOCIETY.

Our LEGISLATORS frame LAWS for the suppression of vice and immorality; our DIVINES preach from the PULPIT against the vices that stain the characters of MEN; but do Laws and Preaching effect a reformation of manners?—To this inquiry, EXPERIENCE would not give a very favourable answer.

The reason is obvious; the attempts are directed to the wrong objects.—Laws can only check the public effects of vicious prin-

ciples, but can never reach the principles themselves; and preaching is not very intelligible to people, till they arrive at an age when their principles are rooted, or their habits firmly established. To attempt to eradicate old habits, is almost as absurd, as it would be to lop off the branches of a huge OAK, in order to root it out of a rich soil.—The most that such clipping will effect, is to prevent a further growth.

The only practicable method to reform mankind is to begin with CHILDREN; to banish, if possible, from their company, every low bred, and immoral character. Virtue and vice will not readily grow together, but they will grow where they are planted, and when one has taken root, it is not easily supplanted by the other. The great ART of correcting MANKIND, therefore, consists in possessing the youthful MIND with good principles.

For this reason, the welfare of SOCIETY requires that the Educa-

ION OF YOUTH should be watched with the most scrupulous attention. EDUCATION, in a great measure, forms the moral characters of MEN, and MORALS are the basis of GOVERNMENT. EDUCATION should, therefore, be the first care of a LEGISLATURE; not merely in the institution of SCHOOLS, but in furnishing them with the best TEACHERS. A good SYSTEM OF EDUCATION should be the first article in the CODE of all political regulations; for it is much easier to introduce an effectual SYSTEM for establishing good MORALS, than to correct, by *penal statutes*, the ill effects of a bad SYSTEM. We are so fully persuaded and convinced of the correctness of what we have expressed, that we shall almost adore that great man, who shall change our practice and opinions, and cause to be adopted that SYSTEM OF EDUCATION, which shall equally improve all ranks of SOCIETY, and thereby produce universal peace and harmony amongst men.

One great defect in our SCHOOLS is, the want of proper books, such as shall be adapted for the several classes of Society; but those could be readily supplied, if a proper SYSTEM OF INSTRUCTION were only established.

It is said, however, by many very intelligent, benevolent, and very worthy persons, that the system of general INSTRUCTION has been already carried too far, and, that by provoking a spirit of inquiry into the moral and physical state of SOCIETY, which EDUCATION naturally induces, we open a source of discontent, that will excite among the lower ranks, envy towards their superiors, and consequent insubordination;—so that they will be more ready to examine into the rights and titles of those who possess affluence, elevation, and authority, than to recognise and obey them. This sentiment is as old as antiquity can carry us back, even into the darkest ages of the WORLD, and had it been able to stem the current of intellect, GORIUTISM and VANDALISM would still have held dominion over the sterile faculties of the human MIND; they might have sat on their ebony throne, amidst a world of darkness, on which the “SUN OF SCIENCE” had never darted a single ray; but the thing was, as it is now, quite impossible; no obstacle can prevent, or even impede that progress, which is evidently a grand design in the scheme of CREATION, and part of that ascending SERIES which rises from TERRESTRIAL to CELESTIAL INTELLIGENCE,—connecting MAN with immortality.

But, it is objected, that there is danger in giving KNOWLEDGE to the labouring poor, because it will have a tendency to create a desire to live in mere ease and idleness, and an unwillingness to pursue the avocations that require bodily labour, or to fulfil the menial capacities to which they may be subjected; thus an erroneous jealousy arises, lest knowledge and numbers united should subvert the order of things, and by violence, usurp the rights and privileges of the favoured few. This fear will vanish, when we consider that MEN are more easily guided by REASON than by RESTRAINT, and that consent is a lasting tie, while coercion continues no longer to bind than till the opportunity of a release occurs. Again, as IGNORANCE is often attended by obstinacy and stupidity, the removal of these must necessarily qualify the operative or the servant to perform his offices much better, and more satisfactorily to his employers, than he could, were it requisite to guide and direct him like a mere animal AUTOMATON. And as to the idea of aspiring to the possession of power by pulling down the exalted in rank from their stations, and seating themselves in their places, two things will effectually interpose to prevent any such occurrence by means of popular insurrection; first, because, by the increase of KNOWLEDGE the higher ORDERS may and ought to advance in a like, or rather, duplicate ratio, with the lower, so as to leave room

and space beneath; and still preserve that superiority, which their facilities and opportunities afford them the means of acquiring. And surely no one will affirm, that EDUCATION among the CANALS has arrived at a *ne plus ultra*: they, too, must go onwards, towards the perfection of that KNOWLEDGE which shall fit them to sway the SCEPTRE of INTELLECT, and RULE over an enlightened PEOPLE, and this will preserve the dignity and honor of their race, and ensure the respect and obedience that a discerning population will always pay to WORTH and WISDOM. Is this impossible?—Let those who seek a solution of the question look to HISTORY and they will find, that improvement in KNOWLEDGE has been concomitant with the higher and lower degrees and conditions of MEN in all ages. In the *feudal times*, were not the NOBLES of the LAND proportionally more IGNORANT, as well as their *vassals* and *villains*, than the NOBILITY are now? Yet ignorant as those BARONS were, they preserved their rank and authority, because their subjects were in the same state of semi-barbarism. But, would it have been, had one ORDER stood still, and the other advanced in refinement and KNOWLEDGE? the state of SOCIETY would have been preposterous, and must have fallen pieces; both proceeded in a parallel course, and both pres^t the same comparative distance, and have so done to the present time. Have the GREAT lost their dignity thereby, or changed place with the enlightened PEASANTRY? On the contrary, they now receive the honours that REASON awards, instead of the slavish homage that IGNORANCE mechanically paid. If, then, KNOWLEDGE has progressed without destruction to distinctions of rank, and without spoliation, why should we apprehend any thing of the kind, now that improvement goes on; and to what extent who shall say? for there is no definable limit to the power that moves the mighty MACHINE, and that replenishes the *Sensorium of the UNIVERSE*.

In the second place, it must be observed, how little is to be dreaded from the ambition of an instructed PEOPLE; since so very few attain to eminence in LEARNING, considering the paucity of time (as is readily shown by the engraving), that can be spared from the duties of life, that scarcely any surmount the difficulties that weigh them down to the level of their origin. Should, however, one or another, occasionally, soar above his class, and gain a higher station, the example may create emulation, and who would regret the excitement of a laudable feeling, or the elevation of a meritorious individual? There is yet another argument in favour of KNOWLEDGE, which is this:—KNOWLEDGE, if properly inculcated, teaches MAN to perform his *duties*, and as he regards his own RIGHTS, so to respect the RIGHTS of others; without these wise maxims that WISDOM suggests, a MAN may learn to be CUNNING, but truly he has no claim to legitimate KNOWLEDGE.

All HISTORY, if properly studied, contributes to sustain this conclusion. The retrospect of causes and effects evidently demonstrates, that IGNORANCE has been the means of producing most of the evils and miseries which MANKIND have suffered, ever since they have been able to record the actions and events of their own times and countries; and that, as KNOWLEDGE advanced, SHE brought in her train, not only the ARTS, that embellish LIFE, but also, all those SOCIAL VIRTUES, that soften the asperities of our sublunary path, and introduce a CONCORD, and SYMPATHY among us unknown to the rude ages of Antiquity. If

* Is not this already the case as is shown in the circles 2 and 3 in the engraving? And why should not the same privileges be granted to the circle marked No. 5.

this be so, and who can deny it? why should we wish to halt, in the MARCH, or stand still in the WAY, every step of which has given us such proofs of its being "THE ROAD TO HAPPINESS?" Not one, surely, would wish to go back, for on what era can he fix of the past, that shall be comparable to the present, with respect to the real enjoyments of LIFE. But the "LAW OF NATURE" suffers no rest, we must advance or recede; behind us is DARKNESS, before us, the DAY, on which "THE SUN OF SCIENCE" shines: let us seek its genial RAY, and prosper by its INFLUENCE.

ACCOUNT OF A COLONY OF CARPENTER ANTS.

BY PROFESSOR BENNIE, OF KING'S COLLEGE, LONDON.



NEST OF THE WOOD ANT, WITH THE GREATER SPOTTED WOODPECKER.

A. B. C.



Wood Ants (*Formica fuliginosa*).
A. Male. B. Worker. C. Female.

I had brought into my garden at LEE, in the beginning of June, a large piece of a willow tree, which had been very curiously worked out by the species of ANTS usually called the *Emmet* (*Formica fuliginosa*, LATREILLE). The tree, indeed, from which it had been taken, appears to have been destroyed in a great measure from the extensive excavations of these little Carpenters. Yet the portion of the tree which I have seems to be singularly strong, when the great number of the cells and their peculiar structure is taken into consideration. The walls of these cells are literally as thin as writing paper, though not quite so smooth and even, and they are seldom quite parallel, but arranged, some perpendicularly, and others slanting in various directions, worked out, it would appear, upon no previous design, but begun at any given point, and only limited in extent by the worker discovering his approach to one adjacent. The tact with which they chisel away the wood with their jaws, so as to come so near the next cell without actually cutting into it, cannot well be accounted for on any of the common principles of

human mechanism. It cannot be the result of vision, from the worker-out looking along the level of the plane, as one of our carpenters would do, and thence working so as not to cut through it; for the wall has, in most instances, though not in all, no free edge, along which such a level could be taken by the eye. Hearing might assist them, however, supposing workers to be engaged in chiseling on each side of the partition; but it would appear to be more from touch, or rather that modification of it denominated tact, which enabled them to feel, as it were, when they have nearly penetrated the wall, and which consequently warns them to stop.

It is not a little remarkable, that all the wood which is worked out by these ants is tinged of a black colour, giving all their streets and lanes somewhat the appearance of having suffered from fire or of being smoked. M. Huber, the younger, did not succeed in ascertaining the cause of this black colour. I should conjecture it to arise from iron contained in the *saliva* of the ants acting on the *gallic acid* of the wood, in the same way as the same wood becomes black when cut with a knife. I throw this out, however, only as a plausible conjecture, which may readily be either verified or disproved by a very simple chemical experiment, which I had not leisure at the time of writing this to try. The fine glossy black of the ants themselves may originate from the same chemical principle, and this is rendered more probable, from the excavations made by other species, such as the DUSKY ANT (*Formica fusca*, LATREILLE) not being tinged of this black colour. Neither are the excavations of the latter so regular in the form of the cells, and the delicately thin partitions do not occur. I have seen several colonies of the yellow ant (*F. flava*, LATREILLE) established in trees, though their usual habits lead them to prefer a hedge-bank, the dry ridge of a field, or a small knoll on a common. In none of these, however, had the workers much trouble in making their excavations, the trees being in every instance far gone with the dry rot, and the chambers were consequently as easy to construct as in a knoll of sand. In the instance of the BLACK CARPENTER ANT (*F. fuliginosa*), on the other hand, the wood of the tree selected for their colony is always hard and tough, the easiness of working it being apparently considered a disadvantage rather than a recommendation. I have usually seen these colonies, therefore, in growing trees, the oak seeming to be preferred to all others; and what is worthy of remark, the honey comb-like work does not seem to stop the vegetation, the tree continuing to put forth leaves and shoots as before it was excavated for the use of the colony. In the instance which gave rise to these remarks, the willow tree was indeed dilapidated and shorn of its leaves and branches, yet was it untouched with dry rot, and the wood was hard and tough.

Another singularity respecting this colony was its innumerable population—almost inconceivable by those who have not witnessed it. I have, in several instances, seen the commencement of an *ant colony* by a single female, with no appearance of a future population, except herself and some half dozen eggs, collected into a little cell. The contrast between this and the colony in the willow tree was as striking as between the hut of a cottager and the crowded houses and dense population of LONDON or PEKIN. I think I am under, rather than over, the mark, in estimating the population of this colony in question at one million; and as it was impossible to see one-fourth of the ants at the same time, it might be double or treble that number.

I imagine it might be possible so to glaze a section of this tree, that the ants could be seen at work; yet the younger Huber, who was anxious to accomplish this, did not succeed in any device he could contrive. In consequence, he remarks, of the labourers always working in the interior of trees, they dislike the light, and are desirous of being screened from observation; and hence they could not be induced to work when the light was admitted; in the same manner as I found another ant (*Potera contracta*, LATREILLE), mistakenly supposed by M. Latreille to be blind, would only work when exposed to the light, till the intrusion of a single ray was entirely prevented. Accordingly, when M. Huber exposed them to the light, under the notion of making them work under his eye, they always abandoned the spot to seek some new asylum, and spurned the honey and sugar which he offered them for nourishment.

"I was, therefore," continues M. Huber, "limited by necessity to the inspection only of their excavations; by carefully de-

composing portions of which I hope to acquire some knowledge of their organization. In this examination, I found on one side horizontal galleries, hidden in great part by thin walls, which follow the circular direction of the layers of the wood, while on another side I found parallel galleries, separated by extremely thin partitions, having no communication except by a few oval apertures, lightness and delicacy being the characteristic of the whole workmanship.

In other portions, avenues opening laterally, which include areas of walls and cross partitions, chiselled out here and there within the galleries, so as to separate the several chambers. In a further advanced stage of the work, round holes are always observed, caused in some measure between two pillars cut out in the same wall. In the course of time, these holes become square, and the pillars, originally arched at both ends, are worked into regular columns by the chisels of the little carpenters. This, which is the second specimen of their artisanship, will probably remain in this state as a portion of the edifice.

In another quarter, however, are fragments differently wrought, in which these same partitions, now perforated in every part and skilfully hewn, are transformed into colonnades to support the upper stories, and leave a free communication throughout the whole extent. We may readily conceive, in what manner parallel galleries, hollowed out upon the same plan and the sides taken down, leaving only from space to space what is necessary to sustain their ceilings, may form an entire story; but as each has been separately perforated, the flooring cannot be very level; but this the ants turn to their advantage, since these furrows are better adapted to retain the young which may be placed there.

There is much greater irregularity in the stories excavated out of the great roots, than in those in the body of the tree itself, by consequence either of the hardness and interlacing of the fibres, which renders the labour more difficult, and obliges the worker-ants to vary from their usual manner of proceeding, or of their not following up in the extremities of their edifice the same arrangement as in the centre. Be this as it may, there are still found horizontal stories and numerous partitions.

In the instances in which the work occurs less regularly, it is found to be more delicate; because the ants, profiting by the hardness and solidity of the materials, impart a singular degree of lightness to the whole building. I have observed fragments of wood as thin as paper, containing a number of apartments, and presenting the most singular appearance. Very considerable openings are besides observable at the entrance of these apartments, worked out with much care; but, instead of chambers and extensive galleries, the layers of the wood are hewn into arcades, allowing a free passage in every direction for the inhabitants. We may consider these as the doors or entrances leading to the several apartments."

From these circumstantial details of M. Huber, it will be apparent, that the colony at Lee, which gave rise to my previous remarks, may be considered precisely alike.

Quarantine Station, near Rotterdam, 23d June, 1832.

ANCIENT AND MODERN HISTORY OF THE PELICAN.

ANCIENT HISTORY.

The first engraving represents a Pelican feeding her young with blood from her own bosom; being a fac-simile, from Aldrovand's great work, on Ornithology, 3 vols., folio, Frankfurt, 1610. The draughtsman to this immortal work, as will be seen from the above specimen, was well fitted for his profession, adding to his accomplishments in the arts of "design," the much greater "art and mystery" of "bird-fancying."

CURIOSUS OLD ACCOUNT OF THE PELICAN.

A pellycane is a byrd that is called *Porphiris*, LEUIT xi. and DEUT. xiii. And is a byrd of EYRITZ and dwelleth in deserte besyde the ryver *Nylus*; and is accounted amonge unclene byrdes by the *Leue* in LEUIT. And there ben two maner of Pellycanes; one dwelleth in water and eateth fyse, and the other dwelleth on lande; and loueth wyldernes and eateth venemous beastes; as

lisardes, and other such. And all that the Pellycane eateth, he plungeth in water with his fote, and when he hath so plunged in water he putteth it in his mouth with his own fote, as it were with an honde. Only the pallycane and the popynay among foules vse the fote in stede of an honde.

Also of the pellycane the glōe speaketh *super spatum*; and the same PLYNYUS sayth in this maner. The pellycane loveth to mocke her chyldren. For whan the chyldren ben haughte, and begyn to wexe hoore they smyte the father and the mother in the face, wherefore the mother smiteth them againe and fleeth them. And the thyrde daye, that the bloudde renneth out, and shetleth that hotte bloudde upon the bodyes of her chyldren. And the bloudde the byrdes that were before dead quycken, in the glaze upon that place of the psalme. *Factu Peticanus.* It is sayde that the pellicane fleeth her her bylle and maketh sorowe three dnyes, and then her hotte bloudde upon them; and maketh them alye age in that maner. *Magister Jacobus de Ditracci in li. de mirabil orientalium regionum,* telleth a nother cause of the death of ptines byrdes. He saythe, that in EYRITZ is a byrd that hyght *PELICANS*, a byrd with greate wynges and mooste leane. For all that he swaloweth * * * * * And therefore he maye not holde meate tyll it be incorporate. And the serpente hateth kyndelye this byrd. Wherefore whan the mother passeth oute of the nests to gette meate, the serpente clymeth on the tree, and styngeth or infecteth the byrdes. And whan the mother commethe agayne, she maketh sorowe three days for her byrdes, as it is sayde. Than (he saythe) she smytleth herself in the breste and springeth bloudde upon them, and rereth them fro deatlie to lyfe, and then for greate bledyng the mother wexeth feble, and the byrdes bene compelled to passo out of the nest to gette themself meate. And some of them for kynde loue fede the mother that is feble; and some ben vnykyde and care not for the mother, and the mother taketh good heede thereto, and whan she comireth to her strengthe she nourysheth, and loueth those byrdes that fedde in her a her nede, and putteth away her other birdes, as vnworthy and vnykyde, and suffreth them not to dwelle, nor lyve with her.

Lee, Kent, June 18th.

J. RENNIE.

MODERN HISTORY.

THE PELICAN (Pelcanus Onocrotalus).—The Pelican is a singular and interesting bird, and is equally at ease on the water, or in the air; she is much larger than the swan, measuring five or six feet from the point of the bill to the end of the tail, and ten to twelve feet from tip to tip of the wings. With these proportions, and her melancholy aspect when shut up in a menagerie, it might be imagined that she was a dull and inactive bird, but on the contrary, she is extremely vivacious and agile, and when seen floating upon well-spread wings, with a parallel motion, over the undulating waves few objects in nature present a more lively or even graceful appearance. The beauty of her motions is also agreeable heightened by her colour, which, with the exception of the black quill feathers of the wings, is of a delicate salmon, or blush colour.

The Pelican feeds upon living fish; and to enable her to catch them with facility, Nature has not only provided her for that purpose with an admirable fishing spear, but also with an elastic bag to hoard up supplies for future wants. This apparatus consists of an upper bill of great length, straight, broad, flattened above, and terminated by a slight hook; and a lower bill of a forked shape, the two converging branches of which meet, and form the point of the bill. From the lower edges of these hangs a membranous bag, capable of being so greatly distended, as to contain fifteen quarts of water, or a proportionate bulk of fish. When not in use, this bag, by an admirable contrivance, is wrinkled up in such a manner, as to lie completely hidden in the angular hollow of the under bill.

Thus accoutred, the Pelican sallies forth; majestically committing herself to the winds, which she almost seems to emulate in swif-



ness, and very soon arrives at some favorite haunt, where, perhaps, the finny tribes swarm in unsuspecting millions. These predatory excursions extend equally to the fresh river, and the salt ocean; and are performed sometimes alone, but oftener in company. Arrived at an approved spot, she checks her fastly, flapping wings, casts a keen inquiring look into the green depths beneath her, and waits not long; for suddenly a fish flashes into momentary sight, when beating an upward stroke with her wings, at the same time discharging the air from her lungs, and its adjacent chambers, she souses with incredible impetus into the waters, which ring sharply as they close over, and shut her from the eye of the wondering mariner.

After remaining a few seconds beneath the waters, the victorious Pelican emerges, *unwetted*, to the surface, the briny drops rolling in diamond spherules from her blushing plumage: joyously she lifts the twisting victim from his native element, and consigns it to her pouch. A new wonder now presents itself:—the bird is equally a denizen of the waters. She, whom we have seen beating the winds behind her, now sails with equal ease upon the mountain waves. To accomplish this, the all-bountiful Creator has formed her belly and breast with the exactest nautical skill:—a frigate rests with a far less equilibrium upon the yielding floods than the “clumsy” Pelican. Her feet also are in beautiful accordance. The foot of a pelican, or indeed of any other water-bird, is a miracle of wisdom; the four toes are enveloped in a strong membrane, and the legs are short and thick; with these she pilots herself, with easy speed, and irresistible instinct, to new and profitable adventures.

Loaded with spoil, her pouch stretched to an incredible extent, she returns with unerring precision, and by the shortest road, to her nest, and according to the season, either feeds herself, or her young at leisure.

In this brief history, three things, among a thousand which might be noted, are especially worthy of remark and admiration.

1. The form of her wings, and her general adaptation to strong and rapid flight. Her wings, as we have already partially stated, are large, muscular, and stiffly feathered; her bones, light, and so thin, as almost to be transparent; and the air cells in different parts of

her body, numerous and large. Thus endowed, she either soars to lofty heights, or hovers at a moderate elevation, or descending, skims with aerial lightness over the buoyant waters.

2. The organs, already described, by which she is enabled, leaving the air, to swim to vast distances, and dive to great depths.

3. The form of the bills and pouch, before mentioned, but to which we may add, that the bill is strongly serrated on its inner edges, by which means she is enabled to hold firmly whatever her other powers enable her to catch with certainty.

The Pelican inhabits every quarter of the globe. Those formerly kept in the Tower of London, but now in the Zoological Gardens, are allowed three dozens of small plaice *each*, per day.

We close this account, by a very interesting extract from the Tower Menagerie, which offers a very plausible solution of the origin of the old fable of the pelican's feeding her young with her own blood.

“The female pelican never quits her young, but is fed by the male, who crams his pouch with double his usual allowance, and then proceeds to shovel her fair share into his partner's throat. It is in this manner also that the young are fed, the old bird pressing his full pouch against his chest, and contriving thereby to disgorge a portion of its contents; an action which has no doubt given rise to the fabulous notion of the pelican's feeding its young with its own blood. In fact, the appearance of the bird when in this attitude with the *bloody spot on the end of its bill closely pressed against the delicate plumage of its breast*, may readily account for the prevalence of such an idea in the minds of superficial observers. The first traces of this fable are to be found in the writings of some of the early fathers of the church, and it was eagerly adopted by the heralds of later days, whom unbounded credulity was ever on the watch for the marvellous in natural history more especially.”



THE GUIDE TO KNOWLEDGE.

EDITED BY MR. W. PINNOCK,

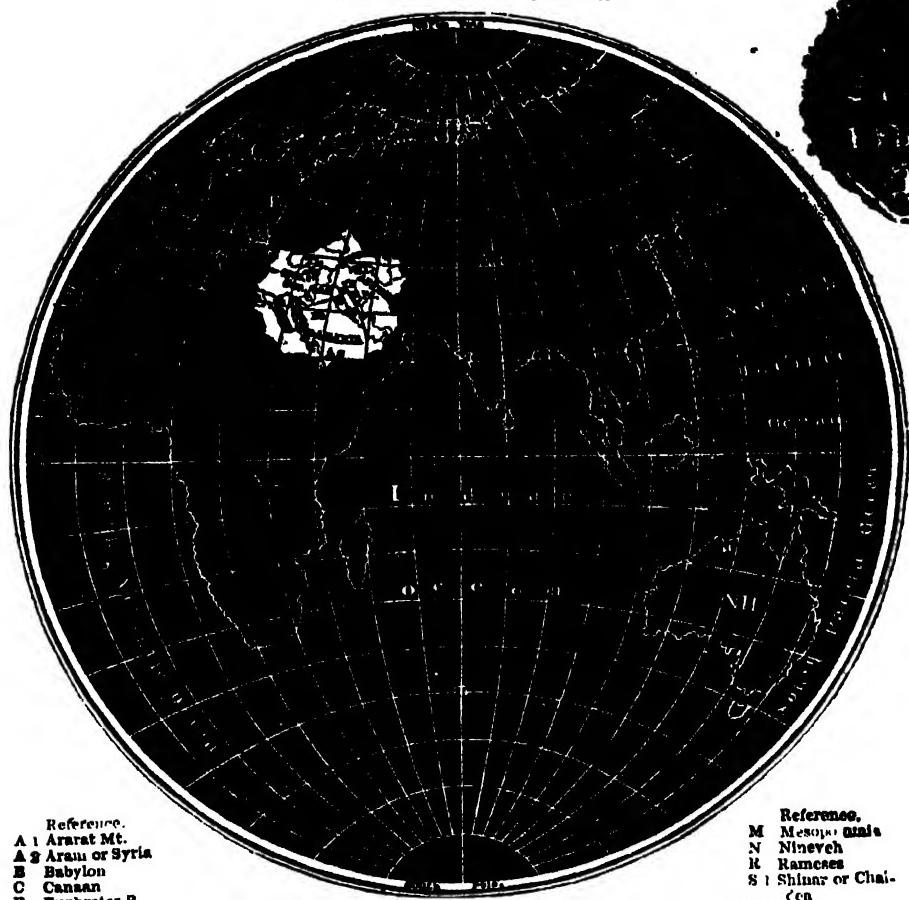
AUTHOR OF "PINNOCK'S CATECHISM," "GRAMMAR OF GEOGRAPHY AND HISTORY," ETC., ETC.

No. II.]

SATURDAY, JULY 14, 1832.

PRIOR
ON SPANNY.

GEOGRAPHY AND HISTORY OF THE WORLD—FROM THE DELUGE TO THE ISRAELITES
GOING OUT OF EGYPT, 1491 B. C.
EASTERN HEMISPHERE.



Reference.
A 1 Ararat Mt.
A 2 Aram or Syria
B Babylon
C Canaan
E Euphrates R
H 1 Hiddekel R
H 2 Havilah

(For a Key to the Modern Parts, see page 1.)

Reference.
M Mesopotamia
N Nineveh
R Ramees
S 1 Shinar or Chal-
dea
S 2 Sidon
T Tyre

HISTORY OF GEOGRAPHY.*

It is, perhaps, impossible to fix the precise time when men began to turn their attention towards GEOGRAPHY, and to examine the form, extent, productions, &c. of the different countries of the EARTH; but we may reasonably suppose that this was one of the earliest efforts of the HUMAN MIND.

The BABYLONIANS, EGYPTIANS, and PHOENICIANS, cultivated this science, and the last mentioned people, in pursuit of Com-

MERCY, made numerous discoveries, and penetrated into the Atlantic OCEAN.

It was among the GREEKS that GEOGRAPHY was first reduced to a regular system, ERATOSTHENES having drawn the first parallel of LATITUDE, which began at GIBRALTAR, passed through RHODES, and proceeded to the mountains of INDIA. Succeeding GEOGRAPHERS attempted to measure the Longitude of places, but, as the true figure of the EARTH was not known until after the time of COLUMBUS, who discovered the "New World" in 1492, latitude and longitude, previous to this, could have been but little understood.

About the time of our SAVIOUR, flourished SIRABO, a CAPADOCIAN, who wrote a treatise on GEOGRAPHY, in seventeen books,

* The idea of the above Map was partly suggested by an Historical Atlas, by Mr. Quin; to which, for a more complete elucidation of the subject, and to shew the connexion between the Old and New World, the Editor has added the geographical delineation of the latter. The light part of the map represents the Old World, and the dark part the modern division of the New; at once showing their relative positions and the progress of civilization.

which has reached our time, and displays great erudition and industry of research.

PIOLEMY, an Egyptian, who lived in the second century of the CHRISTIAN ERA, produced a work on this subject, much more scientific than any that had preceded it. He constructed a map on geometrical principles, and distributed the places according to the latitudes and longitudes.

Numerous works on this science followed, the most interesting and valuable of which have been collected and published by Hudson, under the title of "The Lesser Writers of ancient GREECE on GEOGRAPHY."

During the MIDDLE AGES, when the Roman Empire was in decline, GEOGRAPHY seems rather to have gone backward than advanced, and the most absurd theories were broached on the subject. But the ARABIC nations pushed their discoveries to a considerable extent.

To our immortal KING EDWARD, we are said to be indebted for the earliest accounts that can be relied on, of Denmark, Sweden and Norway. In his time, likewise, Greenland was discovered; and in the year 1390, two brothers of VENICE, named Zeno, sailed with an island, supposed to have been what is now called NEWFOUNDLAND.

In the sixteenth century, MARCO PAULO, a noble Venetian contributed greatly to extend the narrow limits of geographical knowledge by his extensive travels, and the PORTUGUESE, assisted by the recent discovery of the Mariner's Compass visited many points of the GLOBE, till then, either wholly unknown, or imperfectly explored.

In the fifteenth century, COLUMBUS added the knowledge of "NEW WORLD" to the stock of geographical information, an occurrence of vast importance, and a powerful stimulus to future exertion.

From this time voyages of discovery too numerous to be particularized were made, and by the persevering exertions of MAGELLAN, DRAKEL, DAMPIER, ANSON, WALLIS, BOCAGNIVILLE, COOK, LA PEYROUSE, VANCOUVER, and many other circumnavigators, our knowledge of the EARTH has been wonderfully increased, and adventurous travellers are daily adding to it. But, so extensive is the science, that GEOGRAPHY may be said to be yet in its infancy.

OF THE ANTEDILUVIAN WORLD.

(See Map, No. I, page 1.)

In our former number we intimated our intention to lead those Students, who shall be led by our "GUIDE TO KNOWLEDGE," "to begin with the beginning," their dominant we consider, that both the amount and the value of their attainments will materially depend on the Study of History, this is especially the case.

When we look upon the scene of the Earth, when we reflect upon the infinite variety of mind it contains, admiration must we not then feel at the thought of eternity when "the Earth was without form, and void, and darkness was upon the face of the deep."

The shapeless Earth, a huge and dark void, desolate abode of animate inhabitants and inanimate productions; what a picture of melancholy, and unbroken gloom, and immobility, do not the words call up before the reflecting mind? and the command of the most high God, "Let there be Light," and the sublimely instantaneous consummation, "and there was Light!" The sudden bursting of the Light, starting into every corner of the Globe, at the bidding of the God of Light and Life, is almost *per se* as we read the words. But it is for enlightened Man to think, as well as to feel; and to be able to give a reason, not only for the faith, but also for the admiration that is in him.

In regard to the Geography and History of the Antediluvian World, but little is known, the Flood having undoubtedly destroyed most, if not all the monuments and records by which of its circumstances might have been discovered; and which, by analogy of reasoning, would have fortified us with something more

than conjectural conclusions. Moses, in the Pentateuch, gives us a "History of the Creation," which he must have derived from traditional information, through the descendants of Noah. In all probability this History was compiled in Egypt, and the materials gathered partly from those venerable *Fathers of Learning*, the Magicians, and partly from the family of Caphtorim, the great grandson of Noah, who migrated into that country about the time that Moses was born; which event happened *Anno Mundi*, 2373, and before Christ, 1575 years.

From Chaldean origin Magic and Astrology took their rise, and it seems natural to suppose, that some of those mystic arts and occult sciences, practised before the Flood, had been preserved in the Ark, by the sons of Noah, and who had learned them of the wicked devines, and enchanters of the former time. At all events, some passages of the *Sacred History* seem to have a Chaldean origin; and if not thus derived, they must have been obtained by the Chaldees of the New World, who themselves must have been descendants of Noah. Moses, however, had not so much in view the Geography and History of Nations, as the records by which he should be enabled to trace the Divine Government of the world from its Creator, and on that to establish the Laws by which the people of the chosen race were to be guided. For this reason, we are unable to define the limits, or local situation of places with any degree of precision from the account which he has given. Hunting and destroying wild beasts was an important practice of the early ages, and hence it occurred, that bodily strength and agility were more esteemed than wisdom and knowledge; and this engendered a ferocity in man that rendered him barbarous and tyrannical. Those who excelled in this respect were either dreaded or admired; they were such as are described by the name of *Giants*; that is Mighty Men, according to the scriptural phrase, in the 6th chapter of Genesis. It appears, also, that they were dissolute in their habits, totally ignorant of the existence of a God, and given up to licentiousness; but still some arts had been invented and practised. Tubal Cain was an instructor of artificers in brass and iron. They had, therefore, a knowledge of the production and use of those metals long before the Flood; and even Cain built a city, and called it Enoch, after the name of his first born son.

The building and form of the Ark also show that Architecture was not unknown to the *Antediluvians*. Their ignorance was, perhaps, a total want of information respecting the Creator, a reliance alone on human strength, and an entire neglect of the Divine authority; in fact, symptoms of this ignorance remained long after, until Abram was called of God, and removed into another country. Then it was that light began to shine into the human mind, and gross darkness to vanish, and moral rectitude found birth and existence in the inspiration of spiritual knowledge; violence gave place to Right and Justice, and Abram and Lot adjusted their dif-

cult course and agreement, with the summary strife, and without malice in that notable era of a brilliant humanity who light was to extend to all the regions of the Earth.

INTRODUCTION TO A BRIEF HISTORICAL VIEW OF THE PROGRESS OF THE HUMAN MIND.

MAN is a BEING so essentially different from all the other animal creation, on which this world is peopled, his faculties are capable of such indefinite improvement, and they develop themselves by laws which are so varying, and yet so difficult to be traced, that it may be no useless, or uninteresting, attempt, to give a sketch of his development in its results, and follow it from generation to generation, so as to exhibit a faint picture of the progress of human intellect.

To do this, we must minutely and carefully attend to the changes which have taken place in Society, remark the influence which every past period has on that which follows it; and from the observation of what man has been, and what he at present is, form reasonable plans for accelerating his further progress in the road to KNOWLEDGE and HAPPINESS.

By thus observing the vast advances which Man has already made in the development of his faculties, we shall be led to conclude that there are no fixed bounds to their improvement, that his approach to perfection is absolutely indefinite, that circumstances

may render this advance more or less rapid, but that nothing but such a general revolution in the physical and moral world as would prevent the exercise of those faculties, and deprive men of their present resources of KNOWLEDGE, can render this progress retrograde, or even completely stationary.

The first state of civilization is that of a few persons forming a SOCIETY, and subsisting by hunting and fishing. For, though the SCRIPTURES inform us, that our first PARENTS, and their immediate offspring, practised tillage, we have reason to suppose that it was in the most simple way possible, and that their descendants, when scattered over the face of the EARTH, preferred the precarious supplies supplied by hunting, to the toilsome duty of cultivating the ground. In this state MAN may be supposed to possess a language, sufficiently copious to communicate his wants, a few moral ideas from whence he might regulate, in some degree, his conduct, and even a kind of Patriarchal Government.

But, the small numbers of which these rude Societies consisted the monotony of their occupations, and the impossibility, from the nature of them, to make active industry subservient to the future good of themselves, or of their posterity, rendered them careless of every thing but the means of supplying the wants of the present moment. Their time, therefore, was spent in alternate fatigue and complete indolence; and, in consequence of this mode of life, they had few opportunities, and little inducement, to enrich their minds with new combinations of ideas. Their progress, therefore, in intellectual improvement must, in this stage, have been extremely slow.

As population increased, however, hunting and fishing must have provided a very scanty and precarious supply, and the idea of tame and multiplying certain animals for food and clothing must have occurred. MAN must likewise have found it necessary to collect and preserve a stock of those fruits and roots which the earth spontaneously offered to his acceptance, and to attempt to propagate them near his habitation;—thus arose an imperfect Agriculture.

The next natural progress in the path of civilization must have been the acquisition of landed property. MAN naturally claimed a right to that unappropriated land, which he had taken the pains to clear, to plant and sow, and to those animals which he had reared. In process of time all the lands within a convenient distance of the habitations of a tribe, or NATION, would become the property of individuals, and there would be no more for others held in improved for, to appropriate. These then must invent so themselves some other means of procuring subsistence; they must either become servants to those who have more land and more animal than they can personally cultivate and manage, and for their services receive a share of the produce, or they must minister to the new wants, which increase of property has a sure tendency to create, by inventing and fabricating articles of convenience and comparative luxury, for which they may receive the necessaries of life in exchange. Such was the origin of TRADE.

Men possessed of permanent property, managed by slaves or hired servants, became possessed likewise of leisure for meditation; they ponder on the means of removing inconveniences that still exist; the result of their meditation gives rise to new Arts, Agriculture is improved, population increases, and, consequently, there are a greater number of persons, who must exert their ingenuity for subsistence; an interchange of ideas elicits new discoveries, and the dawn of the sciences begins to appear.

In this state of things MAN felt the necessity of some better method of recording events, and of preserving his ideas and their results, than that of committing them to memory, and handing them down by tradition. The first that occurred to him was the Art of "PICTURE WRITING," by which it was attempted to preserve the memory of important transactions. The limited nature of this method induced an improvement; by which such tracts only were preserved as were characteristic of the objects meant to be represented. Afterwards, by a kind of metaphor, the image of a physical object became expressive of moral ideas. Thus, for every word there was a sign, which rendered the art of writing unattainable by the generality of mankind.

At length, some person or persons, whose names are lost in oblivion, though they were undoubtedly amongst the greatest benefactors of the human race, discovered, that, by the combination in different ways, of a few articulate sounds, every word that can be

uttered by the human voice could be formed; hence, they invented signs for those few sounds: thus *Alphabetical Writing* had its origin. This wonderful, but simple, Invention, has secured for ever the progress of the improvement of the HUMAN RACE.

Previously to the discovery last mentioned, the advances of mankind from a state scarcely superior to that of savage beasts to that of a partial CIVILIZATION, can only be guessed at, and traced by probabilities. Ignorance, and the want of means to preserve a permanent record of the progress of improvement, have totally deprived us of any certainty in this respect. But from the period of the discovery of *Alphabetical Writing*, HISTORY has transmitted to us facts, by which we may come to more certain conclusions; although it was not till this method of WRITING was known in GREECE, that these facts were handed down to us, in uninterrupted succession. From this time PHILOSOPHY has no longer any thing to guess, has no more supposititious combinations to form; all it has to do, is to collect and arrange occurrences; and to exhibit the useful truths which arise from them as a whole, and from the different bearings of their several parts.

From the regions of certainty we shall next roam into those of conjecture, and delineate the probable progress of future generations towards that perfection which the constancy of the *Laws of Nature* so clearly promises. We shall attempt to shew, by what step this progress is gradually to be rendered possible, and even easy; how truth, in spite of the transient prevalence of prejudices, and the support they receive from the corruption of Governments, or of the people, must, in the end, obtain a durable triumph; and by what NATURE has, indissolubly, united the advancement of KNOWLEDGE, with the progress of LIBERTY, VIRTUE, and respect for the Natural Rights of MAN.

We shall next endeavour to expose the origin, and trace the history of general errors, which have more or less contributed to retard or suspend the advance of REASON, and, sometimes even as much as political events, have been the cause of Man's taking a retrograde course towards IGNORANCE.

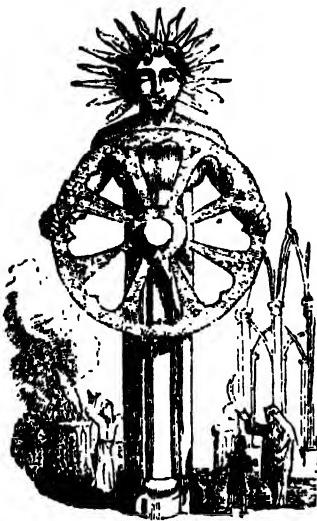
Errors and prejudices are the result of the activity of the human mind, and of the disproportion that always exists between what it actually knows, what it has the desire to know, and what it conceives there is a necessity of knowing. It is even apparent that, from the general laws of the development of our faculties, certain prejudices must necessarily spring up in each stage of our progress, and extend their influence beyond that stage, because men retain the errors of their infancy, their country, and the age in which they live, long after the truths necessary to the removal of those errors are acknowledged by the judicious.

It, then, the prejudices of philosophers be impediments to new acquisitions of truth, those of the less enlightened classes retard the propagation of truths already known, and those of esteemed and established professions oppose like obstacles. The history of the contests which reason has with these three kinds of enemies, together with that of the rise, triumph, and fall of prejudice, will form the subject of several of these Essays.

If it be possible to foretell with any degree of certainty the future improvement of the *human race*, the history of the progress it has already made must form the data on which to found our prognostications. Experience, though not an infallible, is a tolerably sure guide as to what we may expect for the future; and if it be advantageous to observe the Societies that exist at one and the same period, and to trace their connection and resemblance, it must assuredly be so, likewise, to observe them in a succession of periods. Our prejudices, and the evils that result from them, had their source in the prejudices of our ancestors; and to develop their origin and effects will be the surest way of undeceiving us respecting the one, and of annihilating the other. We are arrived at the point when there is no longer any thing to fear, either from new errors, or return of old ones; it will therefore be of advantage to know

NATIONS have been deceived, corrupted, and plunged in misery. A great amelioration of the condition of the *human race* appears to be in progress, and it will contribute not a little to its peaceable and happy consummation, if, by contemplating past revolutions, we learn to render the happiness it promises less dearly bought, and to surmount the obstacles which remain to be feared with greater ease, and without those convulsions which have in general accompanied any material change.

THE DAYS OF THE WEEK.



Our *Saxon ancestors* were exceedingly idolatrous, doing homage to various objects; some material, and others the mere creation of their own untutored imaginations.

Six of their deities were more particularly adored than the rest; viz, the *Sun*, *Moon*, *Tuisco*, *Woden*, *Thor*, *Friga*, and *Scater*, to whom, respectively, the days of the week were consecrated.

SUNDAY, called by the *SAXONS*, *Sunndæg*, was dedicated to the *SUN*, which was their chief deity, as well as that of the *PIRANIANS*. In the Temple consecrated to the *SUN*, was an idol representing the bust of a man set upon a pillar, his face darting bright rays. His arms were extended, and he held a wheel before his

breast, typical of the circuit which the *SUN* is poetically represented to make round our *EARTH*.

MONDAY (*Monandæg*), was devoted to the *MOON*, which was represented by a female image standing on a pedestal, dressed in a very fantastic manner.

TUESDAY (*Thurday*), was consecrated to *THURIS*, who, as legend reports, was father of the *GERMANS* and *SCYTHIANS*, from whom the *SAXONS* sprang, and was held in so much estimation by his countrymen, that at his decease they deified him. He was represented by the figure of a venerable old man, with a long white beard, standing upon a pedestal with a bear's skin upon his shoulders, and a sceptre in his right hand.



WEDNESDAY (*Woden's-dæg*), was consecrated to *WODEN*, or *ODIN*, who was considered by the northern nations the father of all the DEITIES, and the "God of War," uniting the characters of *JUPITER* and *MARS* of the ancients.

WODEN was represented by the figure of a warrior in a martial

pose. The figure was clad in bright armour; in his right hand was a broad and crooked sword, and in his left, a shield.

THURSDAY (*Thor's-dæg*), was consecrated to *THOR*, who was the eldest son of *WODEN*. He was considered the supreme governor of the *AIR*, *LIGHTNING*, and *THUNDER*, in which latter par-

ticular, he answered to the *Roman Jupiter*, and he was supplicated for fruitful seasons.

The idol by which he was represented was seated on a splendid throne; its head was decked with a golden crown, adorned with twelve glittering stars. In the right hand was a regal sceptre.

FRIDAY (*Friga's-dæg*), was consecrated to **FRIGA** or **FREA**, the wife of **WODEN**, and *mother* of all the Gods. She had the attributes of the *Roman Venus*. She was represented by a female figure, holding a naked sword in the right hand, and in the left a bow.



SEATER.

SATURDAY (*Seater's-dæg*), was consecrated to **SEATER**, who by some, supposed to answer to the *Roman SATURNUS*. He was represented by an idol standing upon a pedestal upon the prickly back of a **PURCH**. The figure, whose head was bare, and countenance thin, was in a long coat, confined about the waist and shoulders with a linen sash. In his right hand was a pail of water, in which were fruits and flowers.

Such, with inferior idols, as *Prono*, *Fidegast*, &c., were the DEITIES to whom our forefathers not only offered up prayers, but even sacrificed human victims!

MAXIMS AND MORALS.

An action cannot be perfectly good, unless it be pure in its motives:—that is, unless the motives are virtuous, and free from any mixture of vice.

If we commit small faults without scruple to-day, we shall commit great ones without shame to-morrow.

Pride is the most ridiculous and the most foolish of all vices.

In every thing we do, however trifling, we ought to reflect and reason; otherwise we shall never do any thing well.

Rudeness renders us unfit for every thing.

Flattery is more prejudicial than rudeness or anger.

We owe the greatest gratitude to those who tell us the truth.

Calumny is the vice of those who have neither a good heart nor a good understanding.

We ought never to believe evil of any one till we are certain of it. We ought not to say any thing that is rude and displeasing even in joke, and even then we ought not to carry the joke too far.

Ill-bred persons and proud empty fools are ever ready to be angry at any trifling joke.

THE HUMAN FACE.

A great poet speaks of "the human face divine," and the expression is, to our taste, exceedingly graphical and happy. The face of man is of itself sufficient to announce him lord of the creation. There are a beauty and a dignity in the countenance of man, and more especially in that of virtuous man, which are given to no other created being. This is true, even of the face of a sleeping human being, or of one newly dead. But the human face owes its greatest beauty to its striking and various powers of expression.

Every feeling of the heart, every conception of the intellect, has its appropriate expression in the human features. The eye and the mouth more especially have a wonderfully varied power of expression. From the most sweeping and terrible to the most gentle and amiable emotions, those features can express every shade and every degree of feeling.

The eye is peculiarly susceptible of striking expressions, and even the most crafty and self-possessed can scarcely, if at all, disguise their feelings from him who knows how to interpret the expression of their eyes. It was on this account that one of the ancients gave the singularly apt name to the eyes, of being "the windows of the soul." It is not, however, merely as to their power of expression that the parts of the human face are deserving of admiration. There is an inimitable fitness in every one of them for the purpose for which it is designed. What human power and ingenuity, for instance, could have devised so complete a protection for that delicate and important organ, the eye, as is afforded to it by the eyelashes?

Returning to our first consideration of the human features, we must observe upon the singular inconsistency with which mankind value themselves upon beauty of features, and yet pursue such courses as cannot fail to deface or destroy that beauty.

Nothing is more common than to observe that the very same persons who value themselves upon beauty of features, give themselves to the indulgence of pride and sullenness, and envy and malice; feelings which render the most perfect beauty hateful on the instant, and ultimately sweep away every trace of it. If we would have pleasing features we must indulge only in amiable feelings. The most homely countenance has a portion of dignity, and virtue and kindly feelings can incredibly increase that portion; while a single bad feeling or vicious passion will throw an almost demoniac air over the most lovely conformation of features..

To pride ourselves upon mere beauty of features is, of all kinds of vanity, the most contemptible and ill-founded; for in the production of that beauty we have no share. But in the indulgence of virtuous and amiable feelings we can exercise a power. And, therefore, the features which beam with justice, benevolence, and good humour, are really creditable to him who possesses them, and a just ground of self-respect and self-gratulation. This is the truest and most estimable beauty of features; a reflection and an evidence of *internal* beauty; beauty of soul.

Yet, then, none of our young readers ever puff themselves up with that vain pride which personal beauty excites in ignorant minds. But let them diligently and constantly strive to be good,

for that they may also seem so. For they may rest assured, that they can never look good unless they are good, and that they can never look beautiful unless they look good.

CHEMISTRY OF THE KITCHEN

BY PROFESSOR RENNIE, OF KING'S COLLEGE.

In former times, Philosophy was, for the most part, a very useless and idle study, inapplicable to any earthly purpose, except that of exercising the heads of a few devoted visionaries, who were looked upon by the rest of the world either as tinged with lunacy, or as having a mysterious connexion with evil spirits. All this has come to an end, and philosophy now condescends to examine and improve the most common and the most useful arts. We think it may not be amiss for us to follow her progress in this line of improvement, beginning with her discoveries in the highly important branch of *CULINARY CHEMISTRY*. As we cannot however, comprise so extensive a subject in one short paper, we shall for the present content ourselves with explaining the processes of roasting and broiling.

In order to understand our philosophy, it will be necessary for the reader to consider a piece of meat as composed of solids and fluids—the solids consisting of fibres, and the membranes which unite them into little bundles: and the fluids in water, oil, or fat, gelatine, albumen, or jelly, and osmazome (*ομη* and *ζωγ*), or the essence of flavour. When the fluids, therefore, contained in meat, are exposed to heat in the process of roasting, they become expanded, and are partly converted into steam, which breaks through the numberless fibres and cells where it was confined, and opens a passage for the unctuous juices to stream unconfined among the fibres. It is chiefly the watery portion of the fluids that escapes in vapour, while the fat is liquefied, and the gelatine and osmazome being separated from the fibre, unite into the compound fluid called gravy, which does not exist in raw meat. The albuminous portion of the meat, hitherto in a fluid state, at the same time, coagulates, as the white of an egg does when exposed to heat. The greater part of the gravy, when thus prepared, is prevented from escaping from the joint by the brown frothy crust which is formed on the outside, and is, consequently, retained among the fibres which it had separated, as may be proved by cutting into the meat, when it will be seen to flow out at every pore. If the roasting process, however, be carried too far, the gravy will also be partly expanded by the heat, and evaporated, and will open a passage for the escape of the rest, which will leave the fibres dry, rigid, and carbonized.

We can, from these facts, therefore, very easily account for the tenderness produced in roasting. For the fibres are not only loosened and dissevered from one another by the expansion of the watery juices into steam, but they must even be broken by the violence; and the finer net-work of the cellular membrane, and the smaller blood-vessels, which branch through every man's-breadth of animal substance, must, also, be ruptured and softened. Besides this dissolution and breaking down of the minute parts of the meat, which must take place before a particle of steam can escape, the fibres themselves, which are all in bundles, will become expanded by the heat, and of course the parts of the bundles will become more loose and tender.

From these chemical principles we learn the reason, why meat, that is very lean and dry can never be rendered tender by roasting; for, it does not possess a sufficient quantity of expandable fluids to dissever the fibres, and tear them asunder. Such meat, also, can never look so white and fresh, for a portion of the red colouring matter is always left undissolved into osmazome in consequence of the deficiency of the fluids requisite to form it. Upon examining a piece of raw fat, we find it to be enclosed in little bags or purses of very fine skin or membrane. When fat is exposed to heat in roasting, it is melt-

ed and soon raised to the boiling point, or nearly so, and the water it contains passes off in the form of steam, breaking through the membranous envelope, and allowing the melted fat to escape. The torn membranes, which are on the outside, are soon partially charred, and a small portion of *empyreuma* and *ammonia* being developed in the process, impart their combined flavour to the crust, depriving it of its *rapid* and mawkish taste and odour. Professor Wallace, of Edinburgh, found that beef lost by roasting 32.2 lbs per cwt.; by baking 30.2 lbs. per cwt.; mutton from 31 to 35 lbs per cwt.; or about one-third of their original weight.

In the case of vegetables, when an apple is *roasted*, it not only becomes softer and more pulpy, but it loses a considerable proportion of its acidity, and is more mild and *bland* to the taste. Before it is subjected to heat, it is composed of a very great number of little cells and vessels, containing the acid juice and the pulp—probably, in a separate state. When heat is applied, this juice expands and bursts through the cells in a similar way to what we have just seen taking place in animal substances; and if the heat be further increased, the watery portion of the juice will be partly converted into steam, and burst through the outer skin of the apple, and escape. It is evident, therefore, that when all the cells of the apple are thus burst through and broken down, and the juice freed from its confinement, that the apple must become softer; and it is precisely for a similar reason that it is also rendered soft in the process of roasting, in which the cells are broken down and destroyed. The same principle is applicable to all animal and vegetable substances which become softer by heat.

When the acid and pulp of the apple are thus set free from their confinement, they enter into more intimate union, and the taste of the acid is mellowed by its mixture with the pulp, in the same way that rum is mellowed by being mixed with milk. As the pulp, also, contains sugar, this is disengaged by the heat, and mixes with the acid.

A process of the same kind takes place in *roasting potatoes*; their harsh, raw, watery juices being set free, and mixing with the starch and sugar which compose the pulpy part, are dried up and mellowed, and rendered *furnaceous* and mealy.

We may consider *broiling* as a slight variation of the process of roasting; but though they may appear to differ but little, there is a very considerable difference in their effects.

In *roasting* and *baking* it requires some time to form an incrustation on the surface of meat; but in *broiling*, the quick application of a brisk heat very speedily frees the outside fibres from their watery juices, and a firm and crisp coating of fibre and fat is soon produced. This crust presents a strong barrier against the escape of the juices from the interior, which are more suddenly expanded than in the slower process of roasting, and of course must produce a more violent separation of the small fibres from their several bundles. These effects, however, are chiefly mechanical, for there does not appear to be the same chemical union of the several substances as is observed in roasting; and it is found that broiled meat contains more uncoagulated *albumen*, *gelatine*, and other uncombined chemical principles, than if it had been either roasted or boiled. It is this that renders broiled meat more juicy and *sapid*; while the more sudden and violent rupture of the fibres, caused by the rapid expansion of the fluids, must evidently render it greatly more tender than if they had been slowly and gradually separated by roasting or boiling.

(To be continued.)

WONDERS OF NATURE.

INTRODUCTION.

As we are desirous of exercising the minds of young persons with amusing subjects, and of engaging their attention to the wonders of PROVIDENCE, it is our intention to present to their view those parts of NATURE that are beneficial to MANKIND. For which purpose we shall proceed to make some observations on fishes, beasts, birds, and plants, which will open to us a source of advantage and delight: but being limited in our inquiry, we shall only offer slight sketch of such, as are the most useful and the most esteemed.

In order to take a view of all our treasure, without fatigue or confusion, we shall pursue the easy and agreeable order in which they are arranged by NATURE, and make our visits, in succession, to those places, where they have been disposed.

In the course of our journey we intend to visit the garden, the pasture, and the grove; and, before we return, to take a survey of the woods, forests, and mountains, which we shall find pregnant with delight. The banks of rivers and the ocean will diversify the scene. NATURE affords more in one place than in another; but she dispenses her gifts in every part; and the wild heath itself is not excluded from her liberality.

When we have examined the various objects which are the most useful on the surface of the EARTH, we will visit its interior, where we shall find reserved for our use a great variety of *treasure*. We will descend into quarries and mines; first consider stones and metals in their natural form, after which we intend to enumerate the chief advantages we are able to derive from them. These are the treasures we enjoy; but our view of their variety would be entirely lost, were mere curiosity our only motive. That view ought to be enabled by a very different purpose. All these riches are not imparted to us without a design; and the least we can do, when we receive them, is to acknowledge the intention of our BEING ACTOR.

WONDERS OF THE DEEP. -No. I.

So much of the surface of the globe that we inhabit is covered by water, that, if we were to name it after the surface, sea, or water, would be a much more correct name for it than earth, or land. If we suppose that there are the same irregularities in the surface of that solid part of the earth which is covered by water, that there are in the part covered by land, we must as yet to the water, in some places, a depth of five or six miles, or even more.

Sea animals do not, like the majority of land animals, live on the surface of the sea,—they live in it, and, with the exception of a few tribes, they breathe its substance, separating from it that portion of air which is necessary for the purposes of life, just as land animals use the air itself.

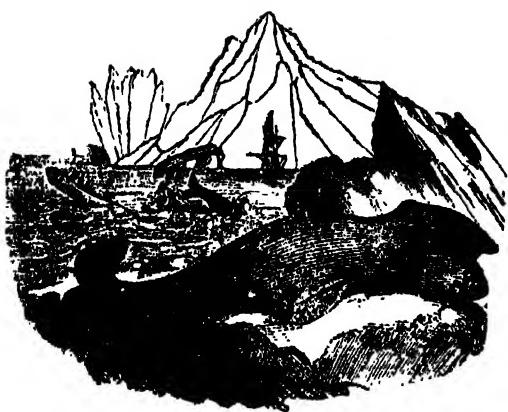
The inhabitants of the sea are far more numerous than those of the land, because they can inhabit the sea at all depths. They are also far more productive; for the number of the young of some single fishes—the common cod, for instance—at one birth, exceeds that of all the children born in the three kingdoms in the course of the year. In common language, all those inhabitants are called fish; but the name is very improperly applied to many of them. Some are mammalia, or suckle their young, and have warm blood;

others are reptiles, with cold blood, and resemble the lizards and serpents of the land; and a very great number, including all those that have shells which they can wholly or partially leave, are mollusca, or animals without bones. There are no birds inhabitants of the sea, although there are many that frequent its surface, and find their food there,—some at a great distance from land. Neither are there, in the sea, any insects, properly so called,—any of those creatures which pass from the state of the greedy grub to that of the sportive fly. Still there is no want of variety any more than numbers. The sea contains the largest animals, and it also contains the smallest—*at least the smallest animals of which the microscope can take cognizance, are found in watery infusions.* The largest animal in the world—the giant of the living creation, is

THE WHALE.

There are many species of whales, differing from each other in size, in power, and in habits; but they all have this in common, that their blood is warm, that their breathings are by means of lungs, and must come to the surface to breathe, that they bring forth their young alive, and suckle them with milk. These whales are arranged into four classes;—1, Those that have no teeth in either jaw; 2, those that have teeth only in the lower jaw; 3, those that have teeth only in the upper jaw; and, 4, those that have teeth in both jaws. The toothless whales are probably the largest, next to them those with teeth below, and those with teeth in both jaws are the smallest of the tribe. In common language, the toothless whales are called “Greenland whales,” or “whalebone whales,” or “oil whales.” They get the first of these appellations from the part of the world in which they are caught; the second from the plates in their mouths by means of which they catch their food; and the third from the consistency of their fat, which boils into a liquid oil. All whales, when in good condition, are covered with a copious layer of fat all over their bodies. That fat answers two very important purposes in the economy of their natures; it helps to preserve the uniformity of their heat, and it enables them to perform their rapid motions through the water. The whales that have teeth in the lower jaw, are called “spermacti whales,” because their fat consists more of stearine, or of the crystallizable part of the fat, than of oil. All animal fat contains stearine; but in the fat of the common whale, the quantity is so small that the oil holds in the liquid state. Stearine may be melted into oil, and into a much purer oil than that which is obtained from the common whale by simple boiling. The latter contains a quantity of membrane, or the substance (or skin) of the cells in which the fat is contained; and that pollutes and gives an offensive smell to the oil. Fats which contain the greatest quantity of stearine are the best adapted for making candles. Of the fat of domestic animals, that of the sheep is the best; and, in common temperatures, the fat of a hog cannot be made into candles. Lighting the streets with gas, obtained from coal, has very much lessened the demand for the oil obtained from whales; and the discovery was a valuable one, as whales are not so abundant, or of so large a size as they were formerly.

The common or Greenland whale (*balena mysticetus*) is now found chiefly, if not wholly, in the Polar seas, close by the never-thawing ice, or in the bays and openings among that substance. Report says it was formerly found as far south as the bay of Biscay, and also in the Mediterranean; but it is probable, that the large whales of the ancients were spermacti whales, and the smaller ones dolphins; as they are represented as having



teeth, and being capable of swallowing large substances, which is not the case with the common whale.

In the early days of the Greenland fishery, whales of from one hundred and twenty to one hundred and fifty feet in length were met with; but now it is rare to meet with one seventy feet long, or exceeding half the length of those giants of the earlier ages. The bodies of similar animals are as the cubes of their lengths; and thus the old whales were eight times as large as those now met with. The quantity of fat is in proportion to the size of the whale; and a modern one is worth 1000*l.*, so that one of the old ones would have now been worth 8000*l.*, which greatly exceeds the value of any land animal.

The fact has not, in all cases, been very clearly made out; but there is at least a presumption, that the inhabitants of the sea are not subject to that old age and decay, which are the lot of all land animals. If that be true, and in so far as observation goes, it is in favour of such a truth, there is absolutely no limit to the size of a whale. But the tenants of the deep are subject to many contingencies. We of course know little of their diseases; but they are often destroyed in vast numbers by *epizooty* or mortal disease, of which the causes are wholly unknown.

In the cut, the common whale is represented as lying on the beach; and, also, as plunging after being struck by a harpoon, and as rising and dashing a boat into the air. The figures will give some notion of the form; but it would require many figures, and much description to give even a slight idea of all the habits of the animal. At rest, it seems a black rock in the water; and the spouts which it sends up from the blow-holes, put one in mind of reciprocating fountains, such as the Geyser in Iceland. In both cases, the water issues with a hissing sound, and is accompanied by smoke or vapour.

The whale is black on the back, slate-coloured on the sides, and beautifully white below; but when it is at rest, little of the white is seen, and as there are no fins but the swimming paws which are under water, and the tail, which is nearly so, there are few indications of an animal. Upon a nearer approach the eyes appear. They are very small, but they are like the eyes of a land animal, and not like those of a fish. The flat eyes of fish, and the spherical form of their crystalline lenses, render them very dull and inexpressive to look at; but the eye of the whale is expressive, and even intelligent, like that of the elephant. Both the structure of

the eyes and the habits of the animal lead to the conclusion, that the sight of the whale is of use to it above the surface, but not of much use below.

When the whale feeds, the mouth is so far in the water as to be nearly concealed. The gape is immense, and the lips firm and cartilaginous. They are supported by jaw-bones, but those bones more nearly resemble ribs than the jaw-bones of land mammalia. They are without teeth, as has been said, and they are also without those means of shutting with rapidity and force with which animals that take their prey with the jaws are furnished. The tongue is very large and fat, and lies in the lower part of the mouth. Along the middle of the upper part there is a ridge of cartilage, to which the plates of *baleen*, or whalebone, are attached. When the mouth is open these plates hang down like a tent; their points and tender sides are fringed, and the fringes retain in the cavity of the mouth the little animals on which the whale feeds. The food is carried entire into the stomach, and the portion of water necessary to convey it to the entrance of the gullet is sent to two bags in the head near the blow-holes. Upon ordinary occasions, these holes serve for respiration; but when the lungs are filled with water, the communication between the lungs and the holes is closed, and the compression of the bags drives up the water in the spouts. As the breathing of the whale has no connexion with the mouth, of course it has no voice properly so called. A large whale has at least one hundred plates of whalebone on each side of the mouth, and some of them are ten feet long: they are shaped something like a sabre, or the blade of a scythe.

The female whale is supposed to go about ten months with young, and to give milk for a year. The milk is sweet and abounds in fat. There is generally one or two young, to which the whale is a most affectionate mother. She clasps them in her paws, which, though externally they have some resemblance to fins, have the bones almost the same as those of the human arm and hand. Whales are altogether gentle creatures, and attack nothing but the small animals on which they feed; and these are not fishes, but soft and shelled animals, which float about on the water.

But though the whale does not use it like a giant, it has a giant's strength. Its tail is perhaps the most powerful organ of motion in existence. In its muscular structure it has some resemblance to the proboscis of the elephant; but it is far more powerful. By means of it the whale can dash along at the rate of twenty miles an hour, without any interruption to its eating; so that it could swim from the pole to the equator in a fortnight, or perform a voyage to India and back again in two months. When struck by a harpoon, it "runs" with much greater rapidity,—so great that the line, and roller of the boat over which that passes, would take fire if water were not poured on them.

When it plunges downward it sometimes draws the boat under water, and there have been instances in which whale and boat have both gone to the bottom of the sea. A blow of its tail can cut a boat in twain, and would dash an elephant to pieces; and the impetus of a whale rising under it, will throw a large boat, with its crew and tackle, into the air. The sperm whale, which we shall notice on a future occasion, is, on account of its greater activity and fierceness, even more formidable.

M.

THE
GUIDE TO KNOWLEDGE.

EDITED BY MR. W. PINNOCK,

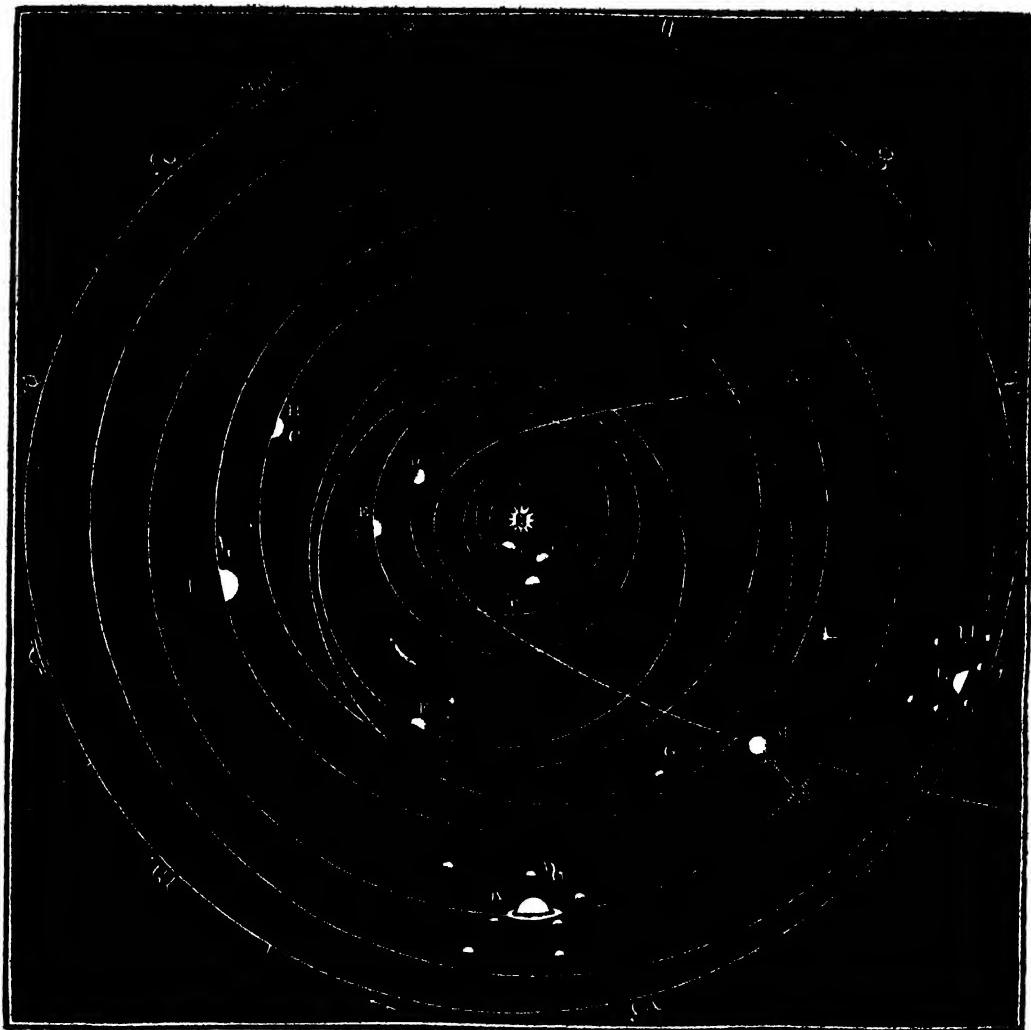
AUTHOR OF "PINNOCK'S CATECHISMS," "GRAMMAR OF GEOGRAPHY AND HISTORY," ETC., ETC.

No. III.]

SATURDAY, JULY 21, 1832.

PRICE
ONE PENNY.

SOLAR SYSTEM.



Reference.	Reference.	Reference.
S Sun	D Orbit of Mars	H1 Orbit of Jupiter
A Orbit of Mercury	E Vesta	K " Saturn
B " Venus	F Juno	L " Uranus
C " Earth	G Pallas	M Part of a Comet's Orbit
	H Ceres	

The revolutions of the planets and comets round the sun, as their centre, constitutes what is called "The Solar System."

The number of planets at present known, is eleven; they have received particular names, and have also characteristic signs, which serve to designate them in an abridged form.

They are, Mercury ♀, Venus ♀, Mars ♀, Jupiter ♀, Saturn ♀, Herschel or Uranus ♀, Ceres ♀, Pallas ♀, Juno ♀, and Vesta ♀. The first five may be seen with the naked eye; these have been known from the remotest times. Uranus, discovered more recently, can be perceived by the naked eye, only under the most

favourable circumstances; the other four cannot be seen at all, except by the aid of the telescope; hence, they are sometimes called *telescopic planets*.

The Copernican, or Newtonian Philosophy, can alone solve the various phenomena of Nature, places the planet *Mercury* nearest the *Sun*,—then *Venus*, the *Earth*, *Mars*, *Jupiter*, *Saturn*, &c.; and beyond them the firmament of the fixed stars, which are supposed to be *Suns*, and centres of other systems. The path in which these planets move is called their orbit; and astronomers have made it evident that each of the above-named planets has its respective orbit, and stated revolution. All these are opaque; and, like the Moon, they borrow their light entirely from the Sun, as is evident, from their appearing, when viewed through the telescope, with all the various phases and changes of the Moon.

Mercury and *Venus*, because they move within the orbit of the *Earth*, are called *inferior*, or *inner planets*; and because *Mars*, *Jupiter*, *Saturn*, &c. move in larger orbits than the *Earth*, they are called *superior*, or *outer planets*.

The *Earth* is attended by *one*, *Jupiter* by *four*, *Saturn* by *seven*, and *Uranus*, by *six* Moons, which also receive the name of Satellites. These Satellites or Moons are called *secondary*, as the former are called *primary planets*.

Whilst the planets perform their periodical revolutions round the *Sun*, by which the course of their year is regulated, they turn round their own axis, and so they obtain the alternate succession of day and night.

Our *Earth* or *Globe*, which seems so vast to us, is nearly a thousand times smaller than *Jupiter*, which appears to the naked eye as little more than a shining atom.

Around the *Earth*, to a certain height, is a rare transparent and elastic substance, called the *Air*, or *Atmosphere*, in which we live and move, but without it, should die.

Mercury, *Saturn*, and the planet *Herschel*, are comparatively but little known; the first, because he is too near the *Sun*; the two last, because they are so remote from it.

Every thing in the Universe is systematical; all is combination, affinity, and connexion. From the relations which exist between all parts of the *World*, and by which they conspire to one general end, results the harmony of the *World*. The immutable relations which unite all the worlds to one another, constitute the harmony of the *Universe*!

* The planet *Uranus* was discovered by Dr. *Herschel*, on the 18th of March, 1781; *Ceres*, by *Piazzi*, June 1, 1801; *Pallas*, by *Olbers*, March 28, 1802; *Juno*, by *Harding*, Sept. 1, 1804. *Vesta*, by *Olbers*, March 29, 1807.

HOW DO WE KNOW.

People often feel a great deal of difficulty in learning, from what may appear to be a very simple oversight, namely, a want of considering how they came by that which they know already. One man stands before us; and if any body were to ask us why we know that the one man is not two, we should think the question very silly and unimportant. "We see it with our eyes," and "we can feel it by the touch of our fingers." But truly, eyes and fingers are but lame guides. Press the ball of one eye gently to side with a finger, and the one man will appear to be two; and if the eyes be shut when the pressure is applied, and both opened to the same extent at the same instant, it will not be possible to say which of the two is the original man, and which the counterfeit. Look through one of those multiplying glasses that make a num-

ber of representations all of the same size, and the one man will appear a company. Look towards him through the top of a pyramid of glass, and his form will be changed; and a curious compound of the surrounding objects as unlike a man as one can well imagine will be in his place.

These illusions we can practise upon ourselves, with little trouble, hardly any ingenuity, and the most simple instruments; and so we never can be certain that Nature is not playing some trick upon us by means of some of her apparatuses, which are far more fine and curious than ours. Those who live near the sea, and have observed that element even with moderate attention, must often have seen ships appear in the air, sometimes keel to keel, and at other times mast to mast, when there was no real ship entirely, and sometimes when there was none even in part, in view; and everybody has seen the rainbow, as a substantial and beautifully-coloured, though transparent thing, when in truth there was nothing but bright sunshine and clear water. Clear water also forms black clouds, white clouds, and clouds of a great many colours. Ice is so transparent that the pebbles can be seen under it; but crack it, and it is coloured; powder it, and it is white; hay, even mix it with air, in that state which we call frost, and it becomes as white as snow. Lead is but a dull matter; but melt it, and then lift a thin pellicle on the shovel, and it will show all the colours of the rainbow.)

These are but a very few of the freaks of Nature, and they are such as anybody may notice, and such as anybody worthy of having eyes must have noticed many times over; but still they are quite sufficient to show us that our eyes alone cannot give us knowledge upon which we can depend, unless we have some means of verifying the knowledge that they give us.

But this feeling cannot deceive us: if we can lay our hand upon an object, surely there can be no mistake! The imperfection of flesh is in the hand, too; and before we can pronounce upon the kind of object, or even that there is no object at all, we must have something more than mere touching. That is allowed to be one of the subjects most palpable to touch; and yet our notions of that are very vague. When it is moderate, the very same degree may feel both hot and cold, according to the state of the body, or part of the body. How often do we find, on the same day, and at the same place, one person complaining of heat, and another of cold; and there are few that do not know the experiment of the three busins of water. Let one contain water as hot, and another, water as cold, as the hand can bear, and let the third one be at a medium heat. Put the right hand in the hot water, the left in the cold, keep them there a little, and bring both to the temperate; and the right hand will be chilled, and the left agreeably warmed. How are we to believe in that case—right hand, or left hands, both hands or neither? It is not easy to say; the feelings are all true, but they contradict each other.

As to the consistency of substances, the touch is just as little to be depended on. Touch, blind-folded, a piece of matter which has the same temperature as the finger, and which moves away at the least touch, and be it cobweb or bar of steel, it will feel all the same. Screw a deal seat slowly downwards, unknown to a person, as he sits down upon it, and he shall fancy that it is a soft cushion giving way to his weight.

Nor is it better with regard to number. Take a little round ball—a marble for instance, lay it on the table, bring the middle finger over the forefinger so that they cross, and the points are side by side; place both on the ball, and roll it rapidly in circles, and you will soon find two balls, between which, the two fingers will be alternately in danger of falling down. If the fingers are not crossed, the ball will not feel as if it were two.

The last mentioned instance, as well as the first, that of the double sight when the eye is pushed aside, give us at least a glimpse at "how we know." The knowledge is not the mere touch, or the mere sight, but the repetition of them, in the way of experience; and when the mode of experience is changed, they fail. Consequently, people may look, and touch, and listen, through a very long life, and yet be very ignorant, just for want of thought. Our senses are like ourselves, they can get by rote, without understanding; and we may absolutely gaze our eyes out, and yet see nothing usefully.

PALACE OF THE KING OF THE SANDWICH ISLANDS.



Woman of the Sandwich Islands.

In the course of a few years, from the discovery of these islands in the Northern hemisphere, and many in the South Sea, wonderful alterations have taken place, from the intercourse of the inhabitants with civilized nations; and a few years more, it is probable, that regular towns and villages, churches, and splendid edifices will be seen, where once rude huts were the only human habitations.

Already the monarch of the Sandwich Islands is master of several ships, which have superseded the frail canoes once so valued; and as it is the nature of man not to be satisfied with a slight progress in refinement, no doubt every opportunity will be eagerly embraced of introducing the arts and fashions of Europe. This would, no doubt, have been accelerated by the late visit to England of the king and queen of these islands, had not death prevented their return to their native country.

The progress of civilization will be greatly accelerated when these islands are made to produce articles of commerce. They will then be visited by numerous European vessels, and merchants or their agents will form settlements there, carrying with them artisans and materials for the fabrication of luxuries at present unknown among them.

To call the present habitation of the chief of these islands a palace, and himself a king, seems a burlesque on such titles; but as this is generally done, we must adopt the same phraseology. Indeed, if absolute power constitutes a monarch, and the respectful admiration of the inhabitants of a country for the habitation of their chief magistrate, entitles the edifice to the name of palace, these epithets are not misapplied, as the king possesses unlimited authority, and his palace is greatly superior, both in extent and internal accommodations, to the dwellings of his subjects.

The palace is situated near the sea-side, in the island of Woahoo, and is constructed of stakes, thatched, and the sides clothed with dried grass, giving it the appearance, at a little distance, of a large barn. The furniture corresponds with the simplicity of the mansion, consisting of a few chairs for the chief personages, whilst the rest of the attendants are accommodated with mats on the floor.

The late king Rhio Rhio was a Christian, and had his visit to this country not terminated fatally, would probably have exerted

all his influence for the promulgation of the gospel in his dominions—coercive measures he was too wise and humane to adopt. A large place of worship, erected near his palace, in which Mr. Ellis, a missionary, preached, he called his cathedral, and required his subjects to attend the service there, but they were entirely at liberty to go to it or not as suited their inclination.

The Sandwich Islands are situated in the Pacific Ocean, extending in latitude from 18 deg. 54 min. to 22 deg. 15 min. north, and in longitude from 158 deg. 54 min. to 160 deg. 24 min. west. They were so named by their discoverer, Capt. Cook, in honour of the Earl of Sandwich, at that time first lord of the Admiralty.

These islands are eleven in number, Owhyhee, Mowee, Rānai, Morotoi, Tahoarōwa, Woahē, the seat of government, Attooi, Necheebōw, Grahām, Morotiane, and Tahoā, the last two uninhabited.

The Sandwich Islands are in the same latitude with the West Indies, but the climate is more temperate, and not subject to such terrible winds and hurricanes as spread devastation and destruction among the latter.

The soil is remarkably rich, as is evinced by the size to which the sugar-canes grow, some of them measuring eleven inches in circumference, and having fourteen feet in length eatable.

The natural productions of these islands, either animal or vegetable, are few; but commerce will soon introduce all the varieties that are suitable to the climate, and so far render a real benefit to the inhabitants. No doubt but that, when this is the case, the Sandwich Islands will be a very agreeable place of residence, as far as climate and the productions of the soil are concerned.

The inhabitants, in their persons, manners, and religion, greatly resemble those of the South Sea Islands, particularly of New Zealand, though of a milder disposition than the last mentioned, and without any traces of cannibalism among them; their persons are, in general, of the middle size, and well made, and they are very nimble, active, and capable of enduring fatigue.

Both sexes tattoo their bodies, and even the tip of the tongue—forming a number of curious lines by furrowing the skin with an instrument like a comb, and applying herbs to the wounds, which render the scars ever after visible.

The Sandwich islanders are a social people, living in villages consisting of one or two hundred houses, built without regularity or order; these are generally defended by a wall. Some of the houses are large, and comparatively commodious, while others are mere hovels, scarcely affording shelter from the winds and rains.

The employments of the men consist chiefly in making canoes, mats, weapons, &c.; and of the women in manufacturing cloth and in domestic duties, while the servants are engaged in agriculture and fishing. The amusements of their leisure hours are dancing, boxing, wrestling, &c.

Although these islanders manufacture weapons of war, and war canoes, and are even possessed of muskets, cannon, and ships, they are of a peaceful, friendly disposition, and live in the utmost harmony with one another. This does not arise from any deficiency of courage, but from a natural amienity of character, while it renders them kind neighbours, induces them, likewise to show hospitality to strangers.

Were this intercourse between these islanders with Europeans confined to the good and honourable, their condition would, no doubt, in a few years, be greatly ameliorated, and they would have reason to bless the day that brought a ship to their shores. But with the advantages, it is to be feared, the vices and follies of civilized life will be introduced; and as evil is much more rapid in its progress than good, the Sandwich islanders will not, in general, profit much, as it respects their morals and their happiness by the alteration.

Still there is a hope that the labours of zealous missionaries, blessed by the Almighty, will counteract the evils likely to arise from this intercourse, and promote the temporal and spiritual ad-

vantages of these simple islanders in a great degree. Then, and then only, will they be really benefited by the arts of civilization introduced among them; they will learn the folly of their idol-worship, and bow themselves to the only true God, their Creator and Redeemer. May this consummation, so devoutly to be wished, be speedily realized.

MOSES.



THIS great and celebrated LEGISLATOR is the most ancient of writers. His SACRED HISTORY, which begins with the "CREATION OF THE WORLD," and contains the code of laws for the government of the Hebrews, is written in five books, known by the name of the PENTATEUCH. "The Book of Job" is also attributed to this inspired writer, as well as several Psalms. We may safely infer that, exclusive of the divine authority contained in his compositions, they are valuable on many accounts, as they are indubitably the most remote remains of antiquity; and carry with them all the marks of probability and truth, and are the *only authentic records* which have appeared relative to the origin of the WORLD, and the state of the *primeval ages of MANKIND*.

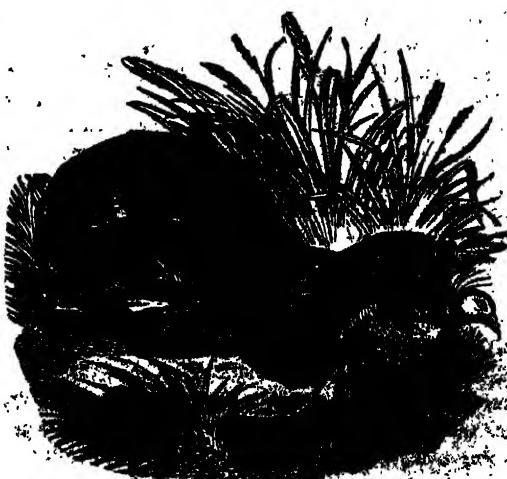
Moses was a native of Egypt. He was born in the year 1571, B.C.

**ANECDOTES OF FOLLETTE,
THE POLECAT ("Mustela Putorius. L.).**

BY PROFESSOR RENNIE, OF KING'S COLLEGE.

THERE is no animal more ravenous, suspicious, ferocious, sedulous to avoid the observation of man—no animal more tyrannical in hen-roosts and dove-cotes, than that whose sanguinary habits I am going to describe: yet the individual of which I speak is gentle and submissive, affable, caressing, and greatly attached to the persons belonging to the house in which he has received kind treatment.

The Polecat, a description of which becomes useless, as the animal is so well known, has a fine triangular head, a long and supple body, very short legs, a penetrating, red, and lively eye, a black and bushy tail, which contrasts excellently with the ashy-brownish-gray colour of his skin; and bounds lightly, gallops or leaps rather than walks. Provided with very sharp claws she climbs with facility along walls, and exercises her destructive empire in her yards and dove-cotes, through the smallest hole of



which, having the power to elongate its body at pleasure, the animal is sure of success. But it is only when favoured by obscurity or gloom, that the Polecat undertakes its expeditions. Its sanguinary executions take place when all is still, and when its eye is no longer terrified by the observation of man.

It is a very good hunter—no watching for its prey, for it has not so much patience as the cat. The noise which accompanies it in its incursions, is often disadvantageous. It has neither the moderation, nor the prudence of the weasel and the cat: but that is no matter—it is agile, and can brave danger with impunity. In the hen-roost, where it finds prey, it strangles without mercy, pillages, and devours eggs, of which it is particularly greedy—it spares neither age nor sex—inundates the theatre of its carnage with blood, and drags to a distance a part of its victims, the removal of which ceases at the approach of day, or as soon as it hears any stirring in the house. If it be winter, it then retires in peace to the granaries, and there enjoys the prize of its cruel victory, exulting at the heap of victims which lie scattered about it.

Like the yellow plundering bees, it has a summer and a winter residence. In winter it is the terror of hen-yards and dove-cotes; in summer it inhabits woods, and is the powerful and ferocious tyrant of quadrupeds and winged tribes. It surprises the bird on her eggs—and thus a whole family is destroyed. In like manner it is the dread of warrens: it dispeoples them in a short time, of young rabbits, and even of the old ones, which it surprises in their burrows, and obstinately clings to them until the blood ceases to issue from the body.

If chased by the terrier, although more light and agile, it does not confide in the rapidity of its course, and cunningly knows how to break off the scent and evade pursuit by darting from the ground into some hollow tree, or in the absence of such a retreat, by climbing upon the branches of a tree. The dogs arrive at the foot of the tree, but it insults their want of power, and seems to despise them, disdainfully snarls at them, until the sportsman, attracted to the spot by the redoubled barking of his dog, punishes it in his turn for its temerity and want of foresight. If it be only wounded by the fire, and the dogs dart upon it to tear it into pieces, it bites and furiously springs upon them, defending itself to the last extremity with equal courage and intrepidity.

Such is the character of the animal at liberty—very irritable, revenging the slightest outrage, and even in certain cases the ag-

greaser;—well! who would think it? the Polecat, to which a celebrated naturalist has denied all habits of familiarity—that animal so characteristically tyrannical, can be gentle, and provoke by his caresses the good graces of his masters.—The dog even, that sensible and faithful friend, does not shew more affection than the Polecat, when it is four years of age, and has been domesticated from the time it was six months old. It has not the undivided treason of the monkey, which captive domesticity only makes insensible.

Only to correction, the Polecat is amenable; only to its feeding. This creature, in the proportion of its size, does not require the exercise of severity to make it gentle; but this gentleness better coincides with its disposition. At the same word Follette, it runs immediately to the master, and returns again to the voice which calls him. She is always at hand, and attends him and endeavours to please him; and she is always ready to receive them favourable, sometimes even affectionate, looks. The dog, his constant companion, has no such power over him; but he may trust the stranger. He may then call her without fear of refusal, she will run to him and receive food, which she had at first refused from a strange hand; she wets it before him and makes a thousand gambols, as if to thank him for his kindness and to manifest her gratitude. She then returns to her master and redoubles her caresses, as if to prove to them, that they were still beloved, and as if she wished by these amiable manners to dissipate in their minds the slightest suspicion of jealousy.

It will be seen by the following traits, that Valmont Bonare, like Buffon, has been too hasty in his decision upon the character of this animal.

"The Polecat," says he, "taken young, may be tamed to a certain degree, but is never attached, and always remains so wild as to be obliged to be kept chained up. M. de Buffon brought up one, which escaped several times from its chain. The first time it did not go far, and returned some hours afterwards; but without showing any marks of joy or attachment to any body. It expressed its desire to eat in the manner that dogs and cats do. Soon afterwards, its absence was of longer duration, and at length it came not back again. It was then a year and a half old; an age at which nature, says M. de Buffon, had apparently prevailed. It ate of every thing that was thrown to it, except salad and herbs. It was remarked, that it drank frequently—sometimes slept for two days together—was also two or three days without sleeping, and was all that time in continual motion. All this argues the animal to be agile, watchful, and jealous of his liberty. Old animals endeavour always to bite, and refuse every kind of nourishment but raw flesh."

I shall comment on these observations by others.

We had remarked, that Follette did not like slavery, and the least symbol of it disturbed and tormented her: so we suffered her to remain at liberty for some few days, at first in her apartments. She did not abuse our confidence. One day, having stolen a partridge from my game-bag, she was hurrying away to eat her plunder in secret, when a passer-by alarmed her, and caused her to let her prey fall. She soon hid herself from our sight, and the pleasure of again breathing a free air rendered her, for this once deaf to our calls.

Follette was gone! The regret was general! Every body in the house was on foot. Where can she be? is the question. Where is any trace of her observed? Has she met with one of her own species to guide her in the uncertain road? Her light

foot has already made its way over the walls and the roofs, and we no longer hear the jingling of her collar. Why was there not a small bell attached, said they, in anticipation of such an event? The consternation became general; it seemed that with her the enjoyments of the house had vanished.

Two days had already elapsed—two days of mourning—two days of lamentation. In vain had the crier published her flight through the precincts of the hamlet. At length, a villager came to tell us, that a maid, which seemed very uneasy, and uttered small cries, was running to and fro, roof of his habitation, without manifesting any desire to change her situation. My children with all expedition repaired to the villager's house. Before they made their appearance, Follette had already heard their voices. A girl, looking out of a window, knew whence issued those well-received voices, and her joy when she beheld her benefactress. The girl's voice was like the arrow's flight; with a shrill, yet ringing sound, and along the roof, sprung towards Follette, with a plaintive cry, till then not heard, and sung her welcome in that affecting scene, she expressed her pleasure at seeing us again, licked their hands, leaped from shoulder to shoulder, and by these caresses endeavoured to renew her satisfaction at the loss of her two little friends. These, I believe, are proofs of her attachment, joy, and sensibility.

Follette can only be freed, indeed, when the hour of the repast arrives; when the members of the society at three stated times in the day, and especially at dinner, claim her privilege as soon as she hears the first stroke of the clock, by presenting herself at the opening of her little hatch, in which she is at full liberty. Her desire is communicated by a small plaintive cry, which changes into a murmur, if we delay to open it—an incontestable proof of voluntary familiarity. But, although growling very much, she does not bear resentment, and her anger vanishes as soon as we approach to let her out; and, far from biting, begins immediately to play, and lick her liberator. Immediately she is introduced into the dining-room; she visits every corner of it, as if to assure herself of the localities, and then evinces her pleasure at being in such good company, first to her favourite, Carlo—caresses him, excites him, and redoubling her gaiety, seems to reproach him for that coldness in his manner, so little worthy of her amicable demonstrations; then Carlo, becoming animated by degrees, and stretching his jaws wide open, begins to reflect, that he must also play, and enters into all the caprices of Follette, who, springing upon his back, suffers herself to be carried backwards and forwards, licks his ears, or, to show him equal complaisance, looks for the fleas which are established among his hair.

She then renews her acquaintance with the cats, who are not so frolicsome, and from whom she seldom receives any other treatment, than a few scratches, which [she bears it good part. One of them only is her friend, and is pleased to play with her, and return her caresses—but Follette, the amiable Follette, according to general opinion, has more gracefulness, suppleness, and delicacy, and none of those tricks by which the cat, always in his character, and forgetting that he is at play, seeks an opportunity to inflict wounds.

Like the dog, she answers to the call—leaps upon the table as soon as she is allowed permission, and traverses the space between the plates and dishes with a surprising dexterity and quickness. She has no reserve for certain food; she eats every thing, but

affects a preference for certain viands, of which she is very fond. For example, she is passionately fond of milk, especially if it is sweetened; rice-milk, coffee, chocolate, &c.; cakes, pancakes, and sweetmeats in general. By offering a bit of sugar to her, she will follow you from one place to another, and even make particular supplications. According to the degree of softness in her licking, so much affection or gratitude is announced.

She is very fond of biscuits, nuts, fruits, cream-cheese, which she laps up with extreme avidity: meat, fish, sauces of every kind; vegetables, such as haricots, spinach, cardoons, salsifis, &c., are good for her, and satisfy its taste and appetite. She eats confectionaries, and also salads which have been recently seasoned such as the common lettuce, goss lettuce, cress, wild chicoree, celery, &c.; in fact, she is omnivorous.

Follette has a particular relish for rhubarb; should there be any upon the table, infused in a water-pot, she will directly dart forwards with great eagerness in order to insert her snout, and drink; she is permitted this liberty, that her singular caprice may be satisfied; then being driven away, she constantly returns to the charge, and with dexterity and celerity lifts up the piece of linen, with which it is covered over, by means of her fore-paws, and squats upon her haunches, like the ape or monkey-tribe. It is impossible to induce her to desist from this importunity but by measures of severity, and by showing her the rod, of which she is very apprehensive.

Follette habituates herself to the performance of three services:—she eats little, but is fond of tasting of every dish. Jumping from plate to plate, she pays an interesting visit to each guest; and by way of salutation first licks his hand in order to have the indulgence to select from his plate what is most agreeable to her palate. With her foot she abstracts from the plate the piece which has met with her choice, or very composedly eats it without removing it from its place, and then makes three or four somersets as a return for her entertainment.

Aster soup, which she laps with great slowness, she regales herself with ragouts and delicacies; sucks small bones with much delicacy, and eventually cracks and grinds them between her teeth, and swallows them. When a raisin is given her, she exhibits her joy by a thousand pretty tricks, while she is eating it—tricks, which the eye delights to observe and follow, and which are unaccompanied by the unpleasant appearance of an ugly mug, and hideous figure, as in the case of that excellent imitator, the monkey.

MAXIMS AND MORALS.

We ought not to make promises lightly, that is, without reflection; but when we have promised, we ought scrupulously to keep our word.

Our happiness depends principally on ourselves, and on the goodness or badness of our dispositions; that is to say, on our being virtuous or vicious.

Passionate anger robs us of reason, while it continues. A man in a passion resembles a drunken man.

Appearances are often deceitful—hence, we should never be hasty in making up our minds on the unfavourable side.

A habit of titilling leads to gossiping, and causes a great deal of mischief and ill-will.

It is not enough to do good when opportunities offer; we ought to seek them.

It is very foolish to be proud of our persons.

CHEMISTRY OF THE KITCHEN.

BY PROFESSOR RENNIE, OF KING'S COLLEGE.

(Concluded, from page 14.)

When we are asked, therefore, what sorts of meat are most fit for broiling, we should say, such as are too dry and deficient in albumen and gelatine for roasting—among which may be mentioned the flesh of old animals, the rump of beef, which abounds in fibre, and above all, game, and most sorts of fish, such as trout, char, mackerel, and herrings, which would be rendered too soft by boiling; and be quite shrivelled by roasting or baking. Such flesh as abounds in gelatine and watery juices is not proper for broiling; and, consequently, lamb, veal, sucking-pig, fawn, and kid, are much more adapted for roasting. The same may be said of the parts of animals, for even the white and tenderous parts of the elder animals should not be broiled, while the red, fibrous parts of young animals may, with propriety, be dredged on the gridiron.

It will appear, from what has been now detailed, that broiled meat contains the greatest portion of nourishment, and is, therefore, preferable to all other modes of cooking. It is, therefore, the best mode in which animal food can be dressed for restoring the strength of invalids, both from its nutritive qualities, and from its being easily digested; as the juices are so little altered that they require little preparation to convert them into good chyle, and healthy blood. Chops, steaks, and many kinds of fish are, therefore, to be preferred broiled rather than fried, when substantial and strengthening nourishment is wanted, even though it should not accord so well with taste, and the fancies of appetite. Those who are already strong require not to be particular, but for invalids it is indispensable.

DIFFICULT TERMS EXPLAINED FOR YOUTH.

CHEMISTRY is that science which enables us to discover the peculiar properties of all bodies, either in their simple or compound state;—or, in other words, it is that science which treats of the several methods of examining the constituent parts of bodies, and which explains their properties, and the laws by which they are combined. The science of CHEMISTRY is much more grand and extensive than it is usually considered, and is of much greater importance. It has of late, however, become much more generally popular than it formerly was, and is now considered as a necessary branch of a LIBERAL EDUCATION. It contains vast stores of useful KNOWLEDGE that are applicable, and valuable, to persons in every station of life. The principal works on this subject are those of *Boucroy, Murray, Thomson, Davy, Brande, and Ure*.

PHILOSOPHY is a term of several meanings. Its usual acceptation, is the knowledge or study of nature and morality, as founded on reason and experience. It owes its name to the modesty of Pythagoras, who refused the title of *wise*, given to his predecessors, Thales, &c., as too assuming, and contented himself with the simple appellation of “*a friend, or lover, of WISDOM.*”

By **PHILOSOPHY** we mean the knowledge of the *reasons* of things, in opposition to **HISTORY**, which is the bare knowledge of facts; or, to **MATHEMATICS**, which is the knowledge of the quantity of **things**, or their **measures**.

These three kinds of knowledge ought to be combined as much as possible.

PHILOSOPHY is usually divided into two parts, **NATURAL** and **MORAL**.

NATURAL PHILOSOPHY is that science which considers the powers of **NATURE**, the properties of **natural bodies**, and their mutual action on one another. This science is sometimes called **PHYSICS**.

NATURALIST is a person who studies **NATURE**, and is well versed in **natural bodies**, especially in what relates to **animals**, **vegetables**, and **minerals**.

The greatest naturalists among the ancients were, Aristotle, Pliny,

Aelian, Solinus, and Theophrastus; among the moderns, Linnaeus, Buffon, and Cuvier. The works of Linnaeus and Buffon are well known; those of Cuvier are less known, from their being so recently published.

LINNAEUS was a Swede; Buffon and Cuvier were Frenchmen.

MORAL PHILOSOPHY is the science that lays down the rules of a virtuous and happy life, and exerts us to the practice of them;—or, in other words, it is the science that directs and forms our manners, explains the reasons, nature, and consequences of our actions, and instructs us how to acquire that felicity which is agreeable to human nature.

MORAL PHILOSOPHY is also sometimes called **Moral Ethics**; at other times **Moral Duty**.

The **Moral**, or **Moral**, is the **principle** derived from it.

MERALS, any thing relating to the manners and conduct of life.

MORAL ACTIONS are such that are the result of **good** or **evil**, and consequently, **rewardable** or **punishable**.

Among the moral virtues are **justice**, **modesty**, **temperance**, &c.

MORAL CERTAINTY is based on **sight** or **very strong probability**, in contradistinction to a **metaphysical demonstration**.

MORAL IMPOTENCY is what we otherwise call a **very great**, and almost **insuperable difficulty**, in opposition to a **physical**, or **natural impossibility**.

CULINARY, relating to the kitchen.

GELATINE, formed into a jelly. **Gelatine** is usually prepared from the skin of animals. **Common gelatine** is a gelatine contaminated or polluted with impurities, to which it owes its color. **Isinglass** is a gelatine nearly in a state of purity.

Gelatine, when quite pure, is transparent and colourless, hard, brittle, and breaks with a glassy fracture. It has scarcely any taste or smell, and is heavier than water.

ALBUMEN is the most frequent of the proximate animal principles. The white of an egg is almost pure albumen. Albumen is abundant in all red-blooded animals. It is present in the blood, ligaments, veins, bones, &c.

PROXIMATE, near and immediate.

OSSAMONE is obtained from the muscles, and has a brown yellow colour. It swells up when heated, and is decomposed.

CARBON is a chemical element, which is sometimes met with pure in the mineral state, as in the diamond. It exists in combination in many minerals; is also found in considerable abundance, in all vegetable and animal matter. The **Cheymist** usually obtains **Carbon**, according to the different uses to which it is to be applied,—from **coal**, from **animal matter**, and from **vegetables**. **Carbon** is solid, insipid, without smell, and generally black.

To carbonize a thing is to burn it in a close vessel until all that is volatile by heat is evaporated, when a black mass of **Carbon** is left, which is applicable to different arts, manufactures, and uses. Thus are produced the **cokes** and **charcoal** of commerce.

FARINACIOUS, mealy, tasting like meal.

SAPID, tasteful, palatable, powerfully stimulating the palate.

EMPYREUMA (*em-pe ré-ma*), the burning of any matter in boiling or distillation.

EMPYREUMATICAL, having the smell or taste of substances as above burnt.

AMMONIA is obtained abundantly by manufacturers from the decomposition of animal matter; chiefly from horn, hoofs, and bone. They are put into an iron pot or still, closely covered, and then exposed to a strong heat. The liquid ammonia of commerce is of very variable strength, which is readily ascertained by **CHEMISTS**.

A **solution** of **AMMONIA** is recommended for restoring the appearance of gold trinkets, which have lost their colour from wear, by removing part of the copper from the surface of the **alloy**.

SOLUTION, matter dissolved, that which contains any thing dissolved. (Also the removal of a doubt, or intellectual difficulty).

Alloy, baser metal mixed with a superior, as in **coinage**, &c.

BLAND, soft.

BIOGRAPHY.

WALLACE, THE HERO OF SCOTLAND.

Not even prejudice itself can prevent some degrees of human virtue from exciting human admiration and esteem.

Were any proof of this truth required we should have a convincing one in the high esteem in which the memory of Wallace, the hero of Scotland, is held by England. For it was as the bitter and untameable enemy of England that his courage, his sagacity, and his perseverance were displayed. But the nobler qualities of his head and heart have aroused the nobler feelings of our nature, and we forget the implacable enemy in the patriot and hero. But, though the fame of Wallace is established among us, the particulars of his public life are by no means universally known; and a brief sketch of those particulars will not be destitute, we imagine, of either interest or usefulness to the majority of our readers.

Alexander the Third, King of Scotland, being killed by an accidental fall from his horse, the Scottish sceptre devolved upon his grand-daughter Margaret, the infant child of his daughter Margaret, who had but a few years previously been married to Eric of Norway, whom in the third year from her marriage left that prince a widower.

Scarcely any event could have been more immediately productive of misfortune and suffering to Scotland than the sudden decease of Alexander, while the princess, his successor, was yet in her infancy. For, the internal state of the kingdom required the exertions of a vigorous and sagacious ruler; while the ambition and the splendid military talents of Edward the Third, of England, threatened to subvert the Scottish monarchy altogether, and to render Scotland itself a mere province, and appanage of the English crown. At first, indeed, it seemed not improbable that the union of the two kingdoms, though inevitable, would be peaceably brought about, and productive of future peace. For Edward, who, when the ambitious and warlike frenzy was not upon him, could prove himself as politic as he was brave, applied to Eric of Norway to give the hand of the young princess Margaret to his son. Eric was too sensible of the advantages which would accrue to him from an alliance with so powerful a monarch as Edward, to make any difficulty about giving his consent to the match; and the young princess speedily set out from Norway on her voyage towards Scotland.

But those who hoped that the union of the young queen of Scotland with the son of the English monarch would avert a war between the two countries were doomed to see their hopes frustrated by an event as unexpected as it was lamentable. For, scarcely had the young princess sailed from Norway, when she was seized with a severe fit of illness, which rapidly increased to so alarming a degree as to induce those who were charged with the care of her, to anchor at the island of Orkney. She was conveyed on shore, but, though every care and attention were lavished upon her, she died soon after her landing. This sad event alarmed and grieved all those of the Scots who were anxious for the preservation of peace. For, while on the one hand it destroyed the hope of giving Edward an interest in the welfare of the Scottish people, and exposed them to the enmity of that ambitious and war-loving king, it also rendered it very probable that Balliol and Bruce, the rival candidates for the crown, would light up the flames of civil war in the prosecution of their respective claims.



Meeting of Wallace and Bruce.

War, indeed, was to ensue; but not precisely from the causes which were expected to produce it. The rival competitors, instead of arming their countrymen against each other, took the more honourable, though, as it subsequently proved, scarcely less fatal, course, of referring their dispute to the arbitration of the English monarch.

Edward gladly accepted the task thus offered to him; and, by way of rendering his mediation effectual, he marched an immense army to the border position at which he appointed the rivals to meet him and make their claims.

When Baliol and Bruce, with their respective supporters, appeared before Edward, he astonished them by declaring that though they had, indeed, solicited him to arbitrate between them, he was about to do so, not in mere compliance with their solicitation, but by virtue of his authority as feudal superior of the kings of Scotland. It was in vain that it was represented to him that the more correct course would be to decide upon the sovereignty first, and then to claim of the new sovereign whatever the sovereignty owed to him. He was too confident in the *might* he possessed, to pay any attention to reasoning upon his *right*. His feudal superiority was, at length, formally acknowledged by the competitors; and then, as if desire grew with indulgence, he stated that in claiming the feudal lordship, he by no means intended to preclude his future claim to the direct and immediate sovereignty itself.

After making this startling declaration, Edward appointed trusty commissioners to decide between the rivals, Baliol and Bruce. The claims of the former were held to be the stronger, and he was accordingly crowned.

But it soon appeared that Edward viewed his feudal superiority in no nominal or honorary light. In fact, he interfered so strongly, and so vexatiously, in the internal affairs of Scotland, that even the tame and pliant spirit of Baliol was, at length, aroused, and a war was the consequence. But though Baliol was roused to resistance, he was not competent to defend his kingdom against an adversary so warlike and powerful as Edward, and he was soon defeated, and taken, as a prisoner of state, to England. Cressingham, the treasurer, and Ormesby, the justiciary of Scotland, were jointly entrusted with the vice-royalty of Scotland; while, Baliol, the crowned king, was a prisoner in the hands of his conqueror.

Now it was, when Scotland groaned beneath the petty and vexatious tyrannies of the servants of its conqueror, that the hero Wallace started into that bold and spirited course of patriotism, which

earned him a fame and an admiration which will cease only when mankind shall prefer slavery to freedom.

In May, 1297, he made a bold, though an unsuccessful, attempt to capture the person of Ormesby. That personage contrived, indeed, to escape, but his very flight gave new energy to the followers of Wallace, and in an almost incredibly short time they expelled the English troops from all the chief and strongest places in Scotland. For some time, every day in Wallace's life brought him the toils and the dangers of battle; and every battle left him in possession of greater power and higher renown. He began with but a few bold followers; but in a short time he found himself at the head of a numerous and enthusiastic army, well provided with all the implements and munitions of war.

Edward, who at this juncture was in France, ordered the Earl of Surrey to crush this daring revolt. That nobleman, with all speed, marched up, armed with forty thousand men into Scotland. Even that immense force would have availed but little, had not the ignorant pride of some of the Scottish nobility fought against themselves and their country. They had been well enough pleased to see Wallace take the lead in the vindication of their national honour while its cause was almost entirely hopeless. But, when his genius and his valour had given a new aspect to the conflict, they suddenly discovered that it was degrading to them that the chief command should be in the hands of a private gentleman! This paltry pride deserved no lenity and no indulgence. But Wallace was a real hero, and a real lover of his country, and when he perceived, by numerous and continued defections, that his authority really was painfully felt by his ignorant compatriots, he voluntarily resigned his command. But this noble act of self-denial came too late. Irresolution and procrastination had already worked their usual evils. Edward himself, with the very flower of his troops, had by this time arrived, and in a battle which was fought near Falkirk, the Scots were completely routed. Bruce, who had all along endeavoured, at whatever sacrifice, to make a friend of Edward, the foe and the scourge of his native land, was actually at this period serving in the English army; he was encountered by Wallace near the Carron; and the latter sternly, yet with feeling, reproached him for his desertion of the cause of Scotland. "You," said Wallace, "are especially bound to oppose the English king, for he wrongs you while wronging your country!" So powerfully was Bruce affected by these words that he from that time resolved to deliver his country; and Wallace may be said to have been, like Sampson, the most victorious on the eve of his death.

For, though unsuccessful himself, he raised up for Scotland a more fortunate, though a less disinterested champion. For a time, Wallace found safety in concealment. The cowardly and mean submission of the *nobles* who had refused to serve under his command left him no hope of delivering his country. But he would not be an active assistant in her enslavement, and neither threat nor promise could induce him to submit himself to Edward.

To the eternal shame of Scotland he was at length betrayed into the hands of the English, by Sir John Monteith, and carried to the Tower of London as a prisoner. And to the still greater shame of the warlike Edward, this gallant man was murderously beheaded here, upon the preposterous charge of treason towards a monarch of whom he neither owed, nor had promised, allegiance. His prosperity, however, has rightly judged him; and all time will admire his ability and patriotism, and lament his death.

THE
GUIDE TO KNOWLEDGE.
EDITED BY MR. W. PINNOOK.

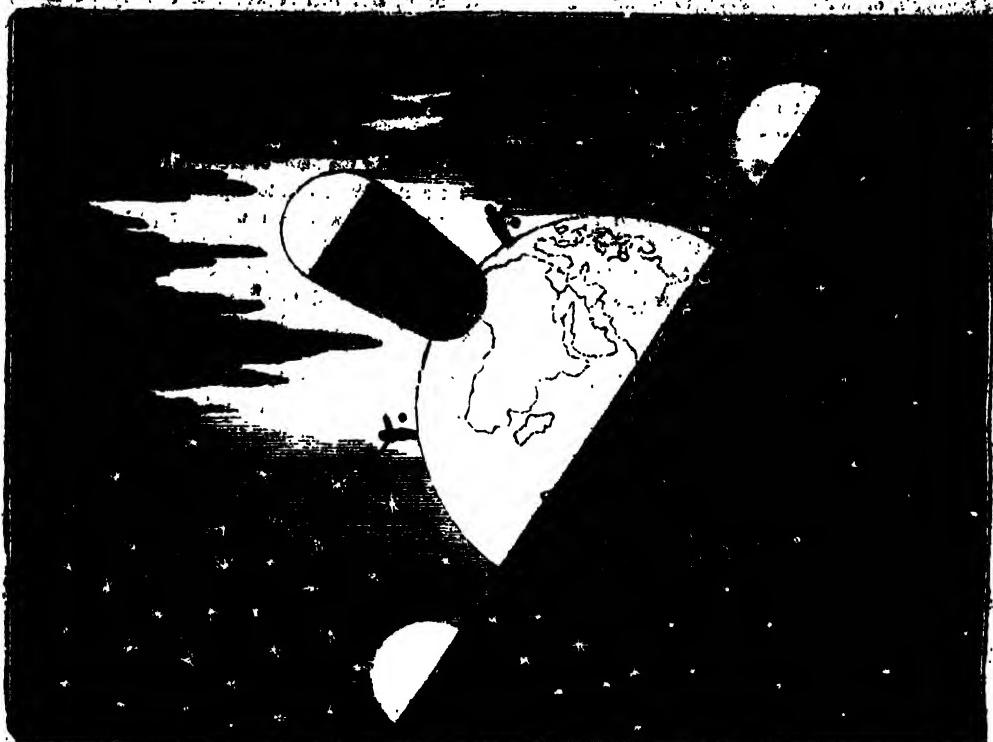
AUTHOR OF "PINNOOK'S CATECHISM," "DICTIONNAIRE OF GEOGRAPHY AND HISTORY," ETC., ETC.

No. IV.

SATURDAY, JULY 28, 1832.

PRICE
ONE PENNY.

OF THE APPEARANCE OF THE HEAVENS.



1. The above engraving represents the heavens, in which the Solar System is considered as forming part; and in order to contemplate a spectacle so grand, let us imagine ourselves upon some high elevation, in an open country, where the view is uninterrupted on every side. The best time for this purpose is upon the setting of the sun, when the western sky is faintly illuminated; at which time, we shall see this light fade away by degrees, the darkness increase, night come on, and the sky will appear a vast dome studded with a multitude of brilliant points. These are the stars, which the too strong light of the sun has prevented us from perceiving during the day. The disposition of these stars seems to be immutable; which is essentially the same now as it was in periods the most remote. The different clusters are such in their configurations as the ancients described them, when they grouped them together under the name of *constellations*; and, to assist the memory, associated them with the figures of men, animals, &c. But these stars, while they preserve the same order, are carried round the heavens as by a common motion. Those towards the west, decline more and more, and disappear when the sun sets; while others, presenting themselves in the east, seem to

come from beneath the horizon. Rising to different heights in the heavens, they descend again, and set in their turn, like those which preceded them. But if, in our latitude, we place ourselves in such a manner, as to have the east on our right, and the west on our left, we shall see, in that part of the heavens which is before us, and which we call north, some groups of stars which seem set; such for example, is the remarkable collection called the "*Great Bear*." This constellation, and the greater part of those which are found in that part of the heavens, disappear only when their light is lost in that of the sun. They may be seen during the whole of the night, and followed through the lowest part of their course, for they never descend to the horizon. If observed at different times of the night, they will be found to have their positions in the heavens reversed, the natural effect of the rotary movement, which they have in common with all the other stars; and the centre, about which they move, is a point of the heavens situated directly north.

The light that appears in the east at the approach of day, soon becomes strong enough to eclipse the stars which have just risen in that direction; the west is now in darkness, and the scene is the reverse of that which happens at the beginning of the night. The

light continuing to increase, the "stars grow fainter" and fainter till they at length disappear, and day sheds its brightness upon every object. The sun now presents itself, is seen in the east like the stars; it ascends and passes through the heavens; declines to the west, and disappears in the part opposite to that in which it rose, when all the phenomena of night are repeated in the manner just described.

By examining the heavens for a number of nights successively, we observe certain stars change their places with regard to others; passing from one constellation they pass towards another; which, for a few days is scarcely perceptible. But these small changes, at length become apparent, and the stars in which they take place are transferred to different parts of the heavens, on which account they are called *planets*, or wandering stars, to distinguish them from those which preserve the same relative situation, and which are called fixed stars.

* This is the common language made use of in astronomy, but the sun's appearing to rise and set is caused by the revolution of the earth on its axis, once in every twenty-four hours.

OF THE ROTUNDITY OF THE EARTH.

The Earth, it will be remembered, is a vast solid body, of a shape nearly round, like an immense ball; and that, although it appears to be permanently at rest, it is in fact in constant motion. And it is so large, that its surface, except where it is irregular by hills and mountains, appears to be flat. About two-thirds of the Earth are covered with water, whose surface is rounded to conform with the general shape of the Earth. On this surface we can sail round the world in all parts of it, and in all directions. All this is easily and readily solved by navigators and travellers. When navigators depart from a coast, they observe that edifices and mountains sink by degrees, and at length disappear as if immersed in the ocean. This effect is not to be ascribed to distance, which causes objects to appear smaller; for, when we lose sight of land from a ship's deck, we perceive it again by ascending the masts. The same takes place with respect to the ship as seen from the shore. It declines by little and little, and finally disappears, descending below the horizon like the Sun at its setting. These phenomena, which are observed continually, and in all directions, prove, that the surface of the sea is convex, and that it is by its interposition that distant objects are concealed. (See engraving.)

If the earth were a plain surface, a single mountain, or a tower, elevated above it, would be perceived from every quarter, at least if the spectators were not so far off as to render its dimensions invisible on account of the distance; and this would not be the case, except at very great distances. The bases of elevated objects would not disappear before their summits. They would not seem to sink by degrees; and when they disappeared from the deck of a vessel, they would not be visible from the top of the mast.

The horizon of the sea, which seems to terminate its surface, is only an apparent limit with respect to the situation of the observer, and is produced by the convexity of the surface of the water. Navigators, who we see depart from the shore, seem to us to go beyond that limit, but their horizon moves on with them. When they have disappeared from our view, we may ascend a mountain near the shore, and see again, for some time, the same vessel which had before appeared to sink in the waters. It would be a bold and important undertaking to ascertain what becomes of this apparent horizon as we advance towards it continually in the same direction. *Ferdinand Magellan*, a Portuguese, was the first who executed this enterprise. He embarked from a port in Portugal, and directed his course towards the west. After a long voyage he

described the continent of America, which had been previously discovered by other navigators, pursuing the same route. Not finding an opening to enable him to continue his course in a westerly direction, he sailed along the coast towards the south, till coming to its southern extremity, he sailed round it, and found himself in the great Southern Ocean. Then he pursued his course towards the west; after some time he arrived at the Molucca Islands; and sailing continually towards the west, he made Europe from the east, and thus arrived at the place from which he set out. This great achievement, since repeated by several navigators, as *Sir Francis Drake*, *Lord Anson*, *Cooke*, &c., &c., proves that the whole surface of the water and land is convex, returning into itself, that the heavens do not touch any part of it, and that in whatever country we travel, the general system of stars is seen to revolve round the Earth in consequence of its diurnal motion. From this, it is plainly shown, that the heavens do not rest upon the horizon of the sea, as one might be led to believe from a hasty observation; and by this, we also ascertain, that the Earth has nothing to rest on, but is suspended in open space by the hand of the Creator.

Here it may be well to explain what is meant by the relative terms up and down. On whatever part of the earth we may be situated, the direction towards the sky, or heavens, is called up, and the direction towards the centre of the earth is called down. So that, with regard to open space, what is up from any given point of the earth's surface, is down from the opposite point thereof; which point is on the opposite side of the earth, and is called our *antipodes*, where people are walking on the earth, with their feet towards our feet, and their heads in an opposite direction, towards the sky, in the same manner as we are at the present moment. *Anti* signifies against, *podes*, feet. This brings us to explain what is meant by

THE ATTRACTION OF GRAVITATION,

Which keeps all heavy bodies upon the earth, unless moved from it by some other force, and which reduces the surface of the water to a form, corresponding with the general form of the earth. (See engraving, page 21.) Now, observe: the power of attraction, which makes all bodies near the earth fall towards it, would make the earth fall to the sun, if this attraction were not counteracted by some other power. The earth being in constant motion round the Sun, the velocity of which being so great, if it were not restrained by the attraction of gravitation, the earth would fly off to a greater distance from the sun, in the same manner that a stone whirled about in a sling flies off the instant it is discharged from the sling. The two powers are made to balance each other so exactly, that the earth has continued from the creation to revolve about the sun, varying its distance in different parts of its course, but regulating it by fixed laws, so that every revolution is the same, and is performed in the same period of time.

Of all the phenomena of the heavens, there are few, if any, that engage the attention of mankind more than the *eclipses of the sun and moon*; and, to those who are unacquainted with astronomical principles, nothing appears more extraordinary, than the accuracy with which they can be predicted.

OF ECLIPSES.

By *eclipse* is meant the privation of the light of some luminary, by the interposition of an opaque or dark body, either between it and the eye, or between it and the sun. An eclipse of the sun or moon is caused by the situation of the moon with regard to the earth.

The eclipses of the sun take place, when the moon, passing the sun and earth, intercepts his rays. Those of the moon take place

when the earth, coming between the sun and moon, deprive the moon of her light. (See engraving.)

Hence, an eclipse of the sun can take place only when the moon changes, and an eclipse of the moon only, when the moon fulls; for at the time of an eclipse, either of the sun or moon, the sun, earth, and moon, must be in the same straight line. (A further account of eclipses will be given in some future number.)

GEOGRAPHY AND HISTORY.

FROM THE DEPARTURE OF THE ISRAELITES FROM EGYPT.

(See Map, page 9, No. II.)

Our readers will remember, that the light part of the first map (in page 1) represents the World as known before the Deluge; and that the light part in page 9 (No. II.), shows the world as known from the Deluge to the departure of the Israelites from Egypt.

In this, the second period, we commence our history with Noah, the founder of nations. As soon as the waters of the Deluge had gradually subsided, and the earth had regained its pristine appearance, Noah came forth from the ark with his family; viz., his wife, his three sons, Shem, Ham, and Japhet, with their wives, and the creatures that had been shut up with him; and with a grateful heart offered sacrifices and thanksgivings for his wonderful preservation.*

Pleased with the conduct of his pious servant, the Almighty promised that he would no more destroy the inhabitants of the Earth by a general Flood, and appointed the rainbow as a pledge of his faithfulness.

The Ark, in which Noah and his family were saved during the Flood, after having been long tossed upon the vast deep, is supposed to have finally rested upon Mount Ararat, in Armenia, about half way between the Caspian sea and the Black sea, now forming part of Asiatic Turkey.

It was in the neighbourhood of these mountains that Noah and his family continued to dwell for nearly one hundred years, during which, they increased so rapidly, that it became necessary for them to enlarge the bounds of their habitation. On this occasion they descended southward, and seated themselves in the "Land of Shinar," which lies on the south-east of Mesopotamia, not far distant from the Gulf of Persia,† where they founded the first kingdom, or empire, which they called Babylonia, from Babel. Thus began the origin of nations.

Here they resolved to erect a stupendous tower, whose top might reach unto heaven, and actually made a considerable progress, when God, disapproving of their undertaking, put a stop to it by confounding their language, so that a man could not understand his neighbour.

When the confusion occasioned by this miracle, had, in some measure subsided, the immense multitude began to form themselves into parties of those who understood each other's language, and to depart in different directions in search of convenient settlements.

The principal part of the descendants of Shem settled in the east country, those of Ham chose Africa for their habitation, and Europe was peopled by the posterity of Japhet.

By degrees, the knowledge of the true God, and his worship, faded from the minds of the inhabitants of the Earth, and idolatry universally usurped its place. But God, who is rich in mercy,

* For the history of the first two periods, we have no other certain guide than the sacred scriptures, the rest being merely oral traditions, and poetical tales, on which no dependence can be placed.

† Not far from the site of the once celebrated Garden of Eden,

instead of taking vengeance on these thoughtless beings, resolved to select one family to restore the true religion, and in due time to give birth to a Saviour.

The highly favoured person, on whom this distinction fell, was Abram, the son of Terah, who dwelt in Ur, of the Chaldees. From this place he removed, by the command of the Lord, to Haran, in Mesopotamia, where he remained till the death of his father; after that event, he took up his residence in Canaan.

Abram was seventy-five years old at the death of his father, and though married to Sarai he had no children. Yet, the Almighty had promised that the posterity of Abram should become a great nation, and that from him should descend the expected Messiah; and Abram believed the promise, however unlikely to the common course of nature.

Among those that had accompanied Abram into the land of Canaan, was Lot, his brother's son. As they were both rich in cattle, the spot on which they had settled was not devoid of importance so great a magnitude. An amicable separation however took place, and Lot removed into the plains of Sodom.

The King of Sodom was a "man" as Chedorlaomer, of Elam (now Persia); and that prince having rebelled against his King Jord, and refused to pay the accustomed tribute, Chedorlaomer hastened to chastise his presumption.

The King of Sodom having called to his assistance some of the neighbouring princes, ventured to give battle to the King of Elam, in the vale of Siddim; but their forces were overthrown, Sodom and Gomorrah plundered, and their inhabitants, among whom were Lot and his family, carried into captivity.

No sooner was Abram informed of the disaster that had befallen his kinsman, than he armed all his servants, and coming unawares upon the enemy by night, put them to flight, rescued the captive and their property, and restored Lot to his former habitation.

From this part of the narrative, we may learn, that the most terrible judgments will not reclaim men from the error of their ways, unless their hearts be changed by the Grace of God. For though almost the whole human race had been destroyed for their impiety, no sooner was the earth replenished with inhabitants, than idolatry again prevailed, and the worship of the true God was observed only by one or two individuals.

The eclipse of the sun is, when it is new moon; the eclipse of the moon, when it is full. They say Dionysius was converted by the eclipse that happened at our Saviour's death, because it was neither of these, and so could not be natural.—Seldon.

There is in some places, particularly in Cephalonia, a little shrub called holly-oak, or dwarf-oak, upon the leaves whereof arises a tumour like a blister, which they gather, and rub out of it a certain red dust, that turns to worms; these they kill with wine, when they begin to quicken, and with this dust they dye scarlet.—Bacon.

Of all wild animals a tyrant is the most mischievous, and of all tame ones a flatterer.—Bias.

As amber attracts a crow, so does beauty admiration, which only lasts while the warmth continues; but virtue, wisdom, goodness, and real worth, like the loadstone, never lose their power. They are the true graces, which, as Homer feigns, are linked and tied hand in hand, because it is by their influence that human hearts are so firmly united to each other.—Burton.

If you will be venerable, instruct your children, and so partake of their good actions.—Persian Sentence.

Astronomy was first taught by God, for man could have taught it; and the first must have been the most excellent in that.—King James.

WONDERS OF NATURE.

'WONDERS OF THE DEEP.—No. II.
THE GREEN TURTLE.

THE turtle, of which we hear so much as a luxury at the tables of the rich, is a native of the seas in the warm or tropical parts of the world; and instead of being considered as a rarity or a curiosity there, it is so abundant, that the flesh of it is sold cheaper than that of any land animal. The tropical shores of America, both on the Atlantic and the Pacific side, the tropical shores of Africa, and those of New Holland, are the favourite haunts of the turtle. These animals prefer lonely places, and thus they are much more plentiful on desert shores and about little barren islands, than they are on those of fertile countries. The little isles called the Alligator Isles, in the West Indian sea; the barren volcanic rocks of the Galapagos in the Pacific; the island of Ascension, in the Atlantic, and the northern shores of New Holland, which are generally speaking, dreary and barren, abound more with them than any other parts of the world. It is worthy of remark, as showing how beautifully matters are balanced in the wonderful structure of creation, that where the land is more than usually barren, the sea is more than usually productive. That is the case, whether the barrenness be produced by the extreme of heat or the extreme of cold. The sea which washes the frozen regions of the north, produces animals which serve the inhabitants for food, clothing, fuel, and light, and even as substitutes for timber in their utensils and houses. The Red Sea, and the channel on the north of New Holland wash thirsty and parched shores; but the bottom of those seas has all the richness of a garden in growth and life, and even in form and colour.

The turtle is a reptile, or an animal with cold blood, breathing very slowly, and very retentive of life. It belongs to the natural family of tortoises (*chelonia*), of which there are three distinct branches, named after the elements which they inhabit. One branch inhabit the land; and those who profess to describe the family accurately, restrict the name *tortoises* to them. The other two branches are called *TURTLES*; and they are distinguished by some of them living in salt water, and others in fresh.

The turtle belongs to the salt water division; and if not the very largest of them, it is at least one of the largest. Its length is sometimes seven feet, and its weight from 700 to 800 pounds. Specimens of that very large size are, however, rather rare; and

the usual weight may be about 200 or 300 lbs. All the tortoises are furnished with a case of armour, consisting of a back-plate, and breast-plate, united at the sides by a very firm and tough, but at the same time a very dilatable skin: the muscles by which the head, feet, and tail are moved, have the one end inserted into this box of mail, so that they may be protruded, or, in whole or in part withdrawn, at the pleasure of the animal. Some, which are on that account called box-tortoises, have a joint across the middle of the breast-plate, so that when the head and extremities are drawn in, they are wholly shut up; but there are others that have the neck and the tail too long for being enclosed within the case, and these are called snake tortoises. The covering of the tortoises is never two entire plates, but each is made up of a number. That number varies, as does also the shape, colour, and texture of the pieces; but the whole are composed of nearly the same substance—a substance more nearly resembling horn than bone, but still differing from horn.

The common turtle, which is also called the green turtle, on account of the colour of the fat, and of that of the skin of the animal when seen under water, has thirteen pieces in the back-plate; and those in the middle are nearly regular six-sided figures. The general outline is oval, or a little heart-shaped, in consequence of the indentation in front to give play to the neck. The head is small in proportion to the body. The eyes are also small; and it does not appear that any of the senses of the animal are very acute. Turtles have no teeth; but their jaws are horny, having some resemblance to the bill of a bird. Their principal food is sea-weed, especially that kind seen under water in the tropical seas, which has got the name of turtle-grass. But though they feed readily at times, they can remain a very long time without food; and there are instances of their being kept in that state a month or two without losing much of their weight.

As their food is at the bottom of the sea, we may suppose that that is their principal place of residence; but as they must come to the surface to breathe, the depths of the ocean are not their natural localities. They can take long excursions, however, having been seen at more than 1500 miles from land. They are not found without the tropics; and, indeed, they are rare beyond the latitude of fifteen degrees. Stray specimens are, indeed, said to have been met with in the Bay of Biscay; and the currents from the tropical seas may have carried them there, but it is not very likely.

At certain seasons of the year, the turtle seeks the shores of the shallow bays, and the mouths of rivers. That is at the breeding time; and the females lay their eggs in holes in the sand, cover them up, and leave them to be hatched by the heat of the sun. The eggs are nearly globular, and from two to three inches in diameter. They are not covered with hard shell like the eggs of birds, but with a membrane having some resemblance to that which lines the shell of a bird's egg, only thicker and tougher. The yolk and white have a good deal of resemblance to those of common eggs, only the white does not coagulate with heat, at least it does not do so readily. The eggs are very pleasant and wholesome food, even in the case of those species of which the flesh is very inferior. They are also very abundant, as one female will sometimes, in a season, lay as many as 150. They are usually laid in the months of April and May, at least on the north side of the equator; and they are laid in three portions, at intervals of from fifteen to twenty days. Each portion is put in a separate nest, which is filled in a short time, and when the weather is favourable, the one brood come out nearly the time that the eggs for the second are laid. There is generally but little food

for turtles at those places where their eggs are deposited; and it is probable that they do not eat much during the time they are there. At all events they do not frequent the breeding-ground during the rest of the year. Until she has deposited her third portion of eggs, the female turtle remains, however, in excellent condition. It is the same with common pullets: they are in excellent condition as long as there are eggs in the ovarium.

The breeding season is, indeed, the grand season for catching turtle. The females come on-shore at dusk, their motions are slow; they are very intent upon their maternal duties; and thus though in general they are very shy and timid creatures, they allow themselves to be approached and laid hold of when in the act of scraping their nests or depositing or covering their eggs. The people watch them at these times, and turn them on their backs in which state they are completely helpless, as the back is too flat, and the legs too short, for allowing them to turn themselves. When turned they are so secure that the men go on to turn the whole before they carry any of them to the boats. Some of them are so heavy that it requires the united force of three men to turn them.

There are various other ways of capturing turtle. When in the water, they differ so little in specific gravity from that, that they are easily brought to the surface. In shallow water, a man dives, lays hold of the two projecting edges of the back-plate, and rises to the surface with turtle and all, where his associates are ready to assist in hoisting it into the boat, which they do by slipping a noose over the head of the turtle as it raises its nose above the water to breathe. They are also taken by means of nets.

By whatever means they are taken alive, they can be kept living for a long time by simply moistening them with water when kept for some time in the air they become specifically so light that they cannot again get under the water without difficulty. Some naturalists have supposed that in such cases they lose weight by evaporation; but that is very doubtful. A much more philosophical explanation of the fact may be found in the different state of the lungs; when the animal is in water, it is pressed on all sides by a weight equal to the depth of the water, and that is one of the causes which expels the air from the lungs. On land that pressure is taken off, and of course the volume of the animal is increased, and its specific gravity diminished; and that in all probability with very little diminution of the absolute weight. That is confirmed by the fact that the turtle always gives out bubbles of air when sinking after having been sometime on land. The particular contrivance by which those marine animals which have no air-bladders, contrive to keep themselves, with apparently the same ease, at different depths of water, have not been examined with that attention which it merits. The pressure of the water increases with the depth; and so no doubt does the specific gravity of any compressible body which is in the water; but there is much to study in the way in which that is done. I have, in the case of a cod pulled suddenly from a great depth, found the reaction so great that the stomach was inverted in the air; and upon a similar principle all the ascents and descents of marine animals may be explained.

Besides capturing them alive, turtle are often pegged or speared in the water; and it is not a little singular that rude and civilized people perform that operation in the same way, only the rude man has a wooden peg, and the civilized man an iron one. The peg is loosely fitted to a large handle, and either the handle or a light float of wood is fastened to the peg with a string. When the peg is struck into the animal near the barb, it holds, and oozes from the handle, and that beats on the surface, and ex-

hausts the animal, which is then taken. Even that, however, is capturing, but not killing. To kill a turtle or tortoise of any kind is no easy matter; even when it is partially cut to pieces, it will live without the part, and even without the head; and it is probable that wounds give it very little pain, the shell of the green turtle is of little value.

TOPOGRAPHICAL SKETCHES.—No. I.

KNARESBOROUGH, YORKSHIRE, DROPPING WELL.



Few towns in England possess so many objects of interest to the admirers of picturesque scenery, natural curiosities, and antiquarian research as Knaresborough. The Nid, a broad and placid river, winds between high and precipitous rocks, forming its banks on either side. On the left bank part of the town is built, the houses are erected on broad ledges of the rock, rising one above the other, from the brink of the river to the summit of the acclivity. Above this gradually elevated mass of houses, trees, and gardens, the square embattled tower of the church appears.

"A fit coronal of the beauteous scene."

While in the distance, towering above the waving foliage, may be seen part of the ruins of the ancient castle.

The church, dedicated to St. John, is a very ancient foundation, it has suffered so much from fire, the dilapidations of time, and, worse than both, from the tasteless hand of modern repairers, that but little remains that can give an idea of the ancient building, with the exception of the clustered columns that support the arches upon which the square tower is built.

It would occupy far greater space than can be afforded in a paper of this description, to give but a brief history of the once magnificent and impregnable Castle of Knaresborough; we can merely state that the buildings were commenced by a Norman knight, named Serlo de Burgh, who attended William the Conqueror in his invasion of England.

At the base of the thickly-wooded acclivity forming the left bank of the Nid a pathway has been formed. Tracing the winding of this path, the various parts of the town erected on the opposite rock, the church, and the castle are seen at various points to great advantage. Near the termination of the long walk, the celebrated petrifying spring, called the DROPPING WELL, is situated. The water rises at the lower ledge or break in a steep mass of lime-stone, about forty yards from the river. After running for about twenty yards in a straight direction towards the river, in a narrow channel, which it has formed upon the projecting rock, the ledge suddenly dips, and the water on arriving at this point separates into a number of streams, running in various directions

to the edge of the rock, and thence it trickles on a broad channel found at the bottom. The continued dropping causes a sort of musical tinkling, which may be caused by the concavity of the ledge, which, bending in a circular projection from the base to the edge from whence the water trickles, overhangs about five yards.

The height from which the water drops from fifty or sixty different pores formed on the edge of the rock, is about ten yards. The mass over which the water runs is about sixteen yards long and fourteen in thickness; in the year 1704 this mass separated from the main bank, forming a chasm of about two yards in width, into which the water that is called the DROPPING WELL, of course ran, but an aqueduct was formed to convey the water across the chasm, and it now continues to drop, as seen in the annexed engraving.

The water spreads itself over the top of the rock, amidst a vast profusion of plants, flowers, and shrubs; and as the water possesses a strong petrifying power, many of the shrubs, flowers, nests, and even the eggs, have become stone, retaining their original form, and continuing to grace the brow of the dropping spring, giving double luxuriance to the ordinary productions of nature, presenting an appearance that could be conveyed by no verbal description.

Numerous plants, articles of wearing apparel, wigs, shoes, pieces of wood, &c. that have become petrified by being exposed to the dropping from the spring, are shown, and may be purchased at an adjacent public house, the attendant of which acts as a guide to the visitors to the dropping well, pointing out with great accuracy the precise spot where the great *northern sibyl*, MOTHER SHIPTON, was born; and the gloomy cave, in which she delivered her mystic prophecies, which, thanks to the introduction of cheap publications, and the consequent diffusion of knowledge, are not so implicitly relied on, even by the humblest of the visitors to the well, as in the olden time. Dame Shipton was born near this spot in the year 1488, and lived nearly a century.

The termination of the long walk brings you directly opposite to a gigantic and nearly perpendicular mass of limestone, on the opposite side of the river, nearly two hundred feet in height. In various parts of the cliff human habitations, in some instances consisting of two rooms, one above the other, have been cut out of the solid rock. We cannot say at what period these excavations were made, but they have existed for many ages, nor do they ever lack inhabitants. A small gothic chapel, dedicated to St. Robert, which is also hewn out of the rock.

St. Robert was an English saint, the son of a mayor of York, in the reign of Richard the First. Being remarkable from his youth for his love of learning, which in those days could only be obtained by becoming a member of some religious society, Robert became a monk at Whitby. After some years of study he became so famous for wisdom and piety, that he was elected abbot of Newminster in Northumberland; but he retired from the world at the latter end of the reign of Henry the Third, and industriously scooped himself a cave or hermitage out of this rock.

At some distance from this chapel is a gloomy cave, which tradition also states was inhabited by St. Robert. The discovery of a skeleton here led to the apprehension and conviction of Eugene Aram, for the murder of Daniel Clark, in 1745. Aram was executed at York, 1759. Edward Lytton Bulwer, Esq., M. P., has made Eugene Aram the hero of a novel, recently published, which has again brought his name into notice.

*Modesty is more becoming and more valuable than beauty.
A family that lives in perfect harmony is universally respected.*

A HISTORICAL VIEW OF THE PROGRESS OF THE HUMAN MIND.

ESSAY I.

THE progressive improvement of the HUMAN MIND may be properly divided into nine EPOCHS OR STAGES, which will form the subjects of as many ESSAYS.

The development of the faculties of the mind can scarcely be said to have commenced, previous to the time of man's uniting into societies, when each exerted himself merely for his own individual advantage, mental improvement was out of the question; the ideas he formed were few and evanescent, and merely relating to the objects around him, or to the means of procuring food, clothing, and shelter from the inclemency of the weather. We have, certainly, no direct information by which to ascertain that this was actually the case, before he made the first advance towards civilization, but we may reasonably infer it from an examination of the intellectual, or moral faculties, and the physical constitution of man.

SOCIETY, it is probable, owed its origin to the association of the members of a family. MAN is, evidently, a gregarious animal; but before civilization had made such progress as to enable him to supply his wants by a division of labour, he could not conveniently gratify this inclination beyond the precincts of his own family. The natural affection for their offspring, implanted in the breasts of parents for the purpose of inducing them to provide for the wants of their helpless infancy, in general begets a reciprocal, though weaker affection in the breasts of children towards their parents; so that, when they were old enough to provide for themselves, if the soil on which they were placed was sufficiently fertile to afford them subsistence, they settled near their native spot, and thus, by degrees, became a horde, at the head of which was the general father of all the tribe.

The union of several distinct families must have originated much later than that formed merely of several generations of the same family. Strong circumstances must have concurred to induce a union of this kind, as from the love of independence natural to man, no one tribe would voluntarily place itself under the dominion of the patriarch of another tribe, unless some great advantage were to be acquired thereby.

When these SOCIETIES became populous, so that the different members of them could be employed in various labours at the same time, they began to fabricate arms, to prepare their food by cooking; to form utensils for that and other purposes; to invent methods for preserving the surplus of their provisions against the season when none could be procured, and thus to distinguish themselves, by the practice of Arts confined to the supply of the most simple wants, from many species of beasts.

Although MAN is formed for and fond of SOCIETY, it is more in the domestic, than in the extended state, where circumstances did not imperatively require the congregating of considerable numbers, the tribe in general consisted of only one or two families; but when, for the purposes of mutual succour, whether in their common hunting, or against the enemy, more extended and durable connexions were formed, the assistance thus reciprocally rendered must have united the members in an attachment to the SOCIETY, and in hatred and desire of vengeance against enemies who might attempt to injure it.

That the advantages of this union might be more certainly and conveniently obtained, [they soon found it necessary to appoint a chief, under whose directions they might the better defend themselves, and procure subsistence with greater ease and certainty. It is true that, in general, the eldest, and most experienced of the

horde were consulted respecting any resolution that effected the general welfare, but the execution of that resolution required to be directed by one, whose authority the rest were expected to obey. The determination of any quarrel that might arise among the members of the community was usually referred to those whose age and personal qualities inspired the greatest confidence.

Although men must have possessed a language before they could proceed to this degree of civilization, *hieroglyphic writing* was of too refined a nature to occur to them in this stage of it. The degrees by which they were introduced have already been noticed in the Introduction, and need not be enlarged on here.

INVENTIONS may proceed from individuals, or from a whole society. Thus the invention of the *axe* was the work of a single man of genius; that of a *language*, of a whole community, agreeing on certain articulate sounds, to denote certain objects and ideas; the former is the result of new combinations which MEN of strong power of mind are capable of forming, the latter arises from the reflections and observations that offer themselves to all men, and from the *laws* contracted in their common course of life.

The dance, music, and poetry were, probably, among the earliest ARTS of civilization. MEN soon began to discover a source of pleasure in regular and enlivening movements, both of the body and of sound; indeed, on hearing the latter, there is usually a spontaneous inclination of the former to a sprightly motion; the warmth of the passions naturally gave rise to a kind of poetical eloquence, which, by degrees, was converted into real poetry, regulated by measure, cadence, and other essential qualities; the origin of songs on the subjects of love and war is of very remote antiquity.

In this epoch of civilization, MEN began to consider a love of vengeance and of cruelty towards an enemy, as a virtue; to treat the female sex as inferiors, on whom the greater share of labour and common drudgery should devolve; to deem the right of commanding in war, the prerogative of an individual family; and to entertain various superstitious opinions. AS MAN never adopts errors without reason, except such as his early education has, in some respects, rendered natural to him, it will be, by no means, an unprofitable speculation to trace the origin, and ascertain the motives of those we have named.

The necessity of observing the heavenly bodies, for the purpose of ascertaining the progress of time, and to direct their course, when at a distance from home, gave to these savages an imperfect notion of *ASTRONOMY*; and that of discovering remedies for wounds and sickness, brought them acquainted with the virtues of some medicinal plants; but the proneness that there is in the *human mind* to depart from the simplicity of NATURE, mixed up with this knowledge many idle superstitions, which laid the foundation of an influence to which MAN has ever since been subject, and from which it is almost impossible to become free.

This influence arose from the formation of a class of men, who became the depositaries of the *Elements of the SCIENCES*, and *processes of the ARTS*, of the *mysteries* or ceremonies of RELIGION, of the practices of SUPERSTITION, and, frequently, even of the secrets of legislation and polity. Thus MEN were divided into two positions; the one destined to dictate, the other to believe and obey; the one proudly concealing what it vainly boasts of knowing, the other receiving with respect, and with implied faith, whatever its teachers shall condescend to reveal: the one wishing to raise itself above reason, the other humbly renouncing reason, and debasing itself below humanity, by acknowledging in its fellow man, prerogatives superior to their common nature.

So late as the beginning of the nineteenth century, this distinction is as prevalent over the greater part of the world, as in the darkest ages of superstition and ignorance, and even in civilised EUROPE, the remains of it are still plainly visible. It is too general, and too constantly meets the eye in all the stages of civilization, not to have a foundation in NATURE itself; and we shall accordingly find, in the state of the human faculties, at this early period of SOCIETY, the cause of the credulity of the first dupes, and of the rude cunning of the first impostors.

UPON SELF-CONDUCT, AS REGULATED BY THE PRINCIPLES OF RELIGION.

We cannot possibly fail to be convinced of the existence of God, the CREATOR, and GOVERNOR of all things, if we shut ourselves to follow the testimony of our own eyes, thoughts, and feelings. All NATURE proclaims the divine truth. But it is the object of the first importance with every sensible and intelligent mind, to acquire a knowledge of God, and of his Government; to adore HIM; and, to exert all its faculties in rendering its power acceptable to HIM. Such virtue is called *Piety*, which arises from RELIGION. Hence, also, are derived all honor and happiness, as Religion is the Mother of all moral excellence. Without a knowledge of God, or a devout attachment to our universal Lord and BENEFICENT, we can only wander in error; and unless we obtain that knowledge and attachment, and are acquainted with the consolations of virtue, and possess that innate tranquillity on whose basis true happiness founded, the essential design of our creation cannot be fulfilled.

The blissful doctrines of the CHRISTIAN, as explained by divine inspiration in the HOLY SCRIPTURES, are happily disseminated among us. May we ever respect, and zealously adhere to its precepts. May we acknowledge in our hearts the DEITY whom it proclaims, and fulfil with cheerfulness the sacred duties it imposes.

The knowledge of RELIGION is the foundation of WISDOM; VIRTUE cannot exist without its aid, nor can TRUE HAPPINESS yield its estimable produce, save in the fertile soil of WISDOM and VIRTUE.

The end of RELIGION is to make us wiser and better; to improve, exalt, and perfect our nature; to teach us to love, imitate, and obey God; to extend our love and charity to our fellow-creatures, according to our several stations and abilities; to govern and moderate our passions; and to regulate our appetites by temperance.

We are so framed by NATURE, as necessarily to require assistance of each other, for our mutual support and preservation: SOCIETY is absolutely requisite for us—the bonds of which are love, charity, and friendship. In this respect we are all upon the same level, having mutually the same wants, and the same need of assistance. Every man, therefore, is bound by the "Law of Nature" to consider himself but as a part or member of that universal body, which is composed of all mankind; and that he was sent into the world for the purpose of promoting the good and welfare of his fellow-creatures, by treating them with love, charity, and benevolence. To this duty, the principles of common humanity oblige us. Nothing, indeed, can be more agreeable to a well-tempered disposition; nothing can afford it a more happy subject of reflection, than a reciprocal interchange of good offices; did we but, therefore, suffer covetousness, selfishness, discontent, and other evil passions, to over-rule this virtuous tendency, we should invariably experience its happy effects.

As the practice of this duty is the most certain method of advancing the true interests and welfare of SOCIETY, so no man, without acting contrary to the law of his being, the reason of his mind, and the natural bent of his uncorrupted affections, can wilfully do injury to another. And if, upon every frivolous misunderstanding, or trifling provocation, which arises amongst men, each party would endeavour to appease, rather than exasperate the other, how much more happy would be the result.

A CHAPTER FOR LITTLE BOYS AND GIRLS.**A RUSSIAN.**

Russia is the largest empire in the world; it extends over a great part of Europe and Asia, and includes the northern parts of America.

This country is considerably larger than the Roman empire was at the period of its greatest magnitude and glory. It exceeds in size the whole of Europe. Its population amounts to about sixty millions.

The Emperor of Russia was formerly called the Czar, and his wife Czarina. It was only so late as 1618, that Michael Romanow laid the foundation of the greatness of Russia, and by serving Czar, established the present family on the throne.

Peter the Great added Siberia to his empire, and by a judicious line of conduct, and a life of great action, first raised this huge, and then inanimate mass, to consideration in Europe.

PERSIAN.

The Persians live in Persia. They are *Mahometans*; and instead of hats, wear turbans. They are called the Frenchmen of Asia, from the politeness of their manners. They are cheerful and very polished, but deceitful.

The houses of Persia are usually built of earth, or mud; they are all flat-roofed, and are only one story high. The floors are entirely overspread with carpets, which, both prince and peasant use for seat, bed, and table.

Its present capital is Teheran, its former was Ispahan. Teheran contains about sixty thousand inhabitants; Ispahan, two hundred thousand. This city was long considered as the finest city in

the East, at which time it contained upwards of six hundred thousand inhabitants.

This country was overrun by Alexander the Great, Tamerlane, and Kouli Khan.

HIGHLANDER.

The people in the north of Scotland are called Highlanders. They wear woollen clothes of many colours, called Scotch plaid, and caps or bonnets on their heads instead of hats. They work hard and are very honest.

The north part of Scotland is called the Highlands, hence the people are called Highlanders. The south part is called the Lowlands.

The Scotch are active and strong, and a very industrious and sensible people. Their most favourite amusement is dancing.

FRENCHMAN.

France is a very fine and rich country. It received the name of France from the Franks, a nation of Germany, who settled in France in the fifth century.

The French are a gay and lively people; very fond of dancing, fencing, and riding. They are also great admirers of the works of nature and art—to the exhibitions of which ALL classes are admitted with safety, so great is their veneration.

The character of the French is considered the very reverse of that of the English. The English, in general, are considered very reserved and haughty, the French polite and sociable. France contains thirty-two millions of inhabitants, Great Britain and Ireland, twenty-four millions.

THE GUIDE TO KNOWLEDGE.

EDITED BY MR. W. PINNOCK,

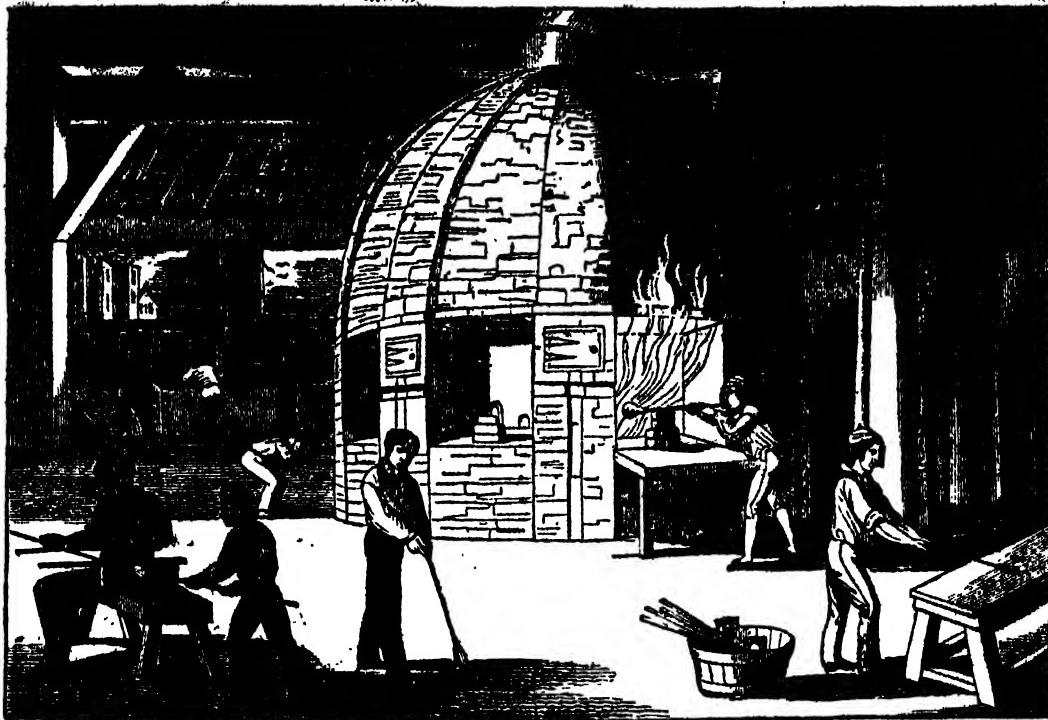
AUTHOR OF "PINNOCK'S CATECHISM," "GRAMMAR OF GEOGRAPHY AND HISTORY," ETC. ETC.

No. V.]

SUPPLEMENT, JULY 31, 1832.

PRICE
ONE PENNY.

MANUFACTURE OF GLASS.



In the whole circle of our manufactures there is not any thing more curious than the one that is depicted in the above engraving. Materials which appear of themselves but little fitted for any useful purpose, are blended together so as to form compounds of a new and entirely distinct character. Indeed, an uninitiated person looking at the sand, lead, and pearl ashes, as they are prepared for the glass-house, would consider that nothing less than the wand of the enchanter could accomplish their change into a hard and crystalline body.

Our metropolis possesses but two large *Glass-houses*, as they are called, and they are both of them open to any person who requires any peculiarly formed vessel which is not commonly kept in their respective warehouses. One of them is in Water-lane, and the other at the south-side of Blackfriar's bridge. Now, we purpose in the first instance, to explain to our readers the general process of manufacturing glass, and then point out how, by a small and simple apparatus, any person may perform all the most important manipulations in this beautiful art.

The ingredients usually employed in the manufacture of glass, with their relative proportions, may be thus briefly described:

120 parts of well-washed white sand
40 , purified pearl ashes
35 , litharge
13 , nitre
1 , black oxide of manganese.

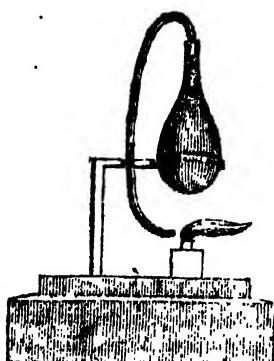
When these materials are collected and properly proportioned, they receive a certain amount of calcination prior to their being placed in the melting-pot. This operation is called *fritting*, and is performed either in small furnaces adjoining to the proper glass furnace, and heated by the same fuel, after its principal force has been expended on the glass-pots, or else in ovens constructed for the purpose. The use of this preparatory process is to discharge all moisture from the ingredients, and to drive off the carbonic gas. This operation is performed gradually, and carried to the point of semi-vitrification. When the materials are sufficiently "fritted," they are thrown with clean iron shovels, through the side opening of the furnace, into the glass-pots, the fire having been previously raised to its greatest intensity. When filled, the opening is closed with wet clay, excepting a small hole for examining the interior of the furnace. The mass soon begins to heave, and exhibit a mass

of liquid grandeur like the waves of the ocean on fire. During this process samples for examination are frequently brought out by the aid of an iron rod, and the glass becomes beautifully clear and transparent. The glass may now be considered as completely made, but it requires some time to cool down to the requisite working temperature. It should be just soft enough to yield with ease to any external impression, even to the force of the breath when impelled against the glowing mass, and in that state it may be bent into any required form. Such, indeed, is its tenacity, that it may be rapidly drawn into a solid string, and wound on a reel, many miles in length.

Having thus brought the glass to a state fit for what is technically called "blowing," we may introduce our readers into the workshop itself, which will be best done by the aid of a graphic illustration, and the picturesque view at the head of this article, will admirably answer the purpose. In the present season of the year the temperature of the blowing-house would shame the hottest portions of the torrid zone, and while we now write, we are labouring under the energizing effects of a visit, many hours back, when the thermometer stood at 140° .

The workmen who are represented in the engraving, are each engaged in one of the manipulations essential to the manufacture of a common drinking-glass. For this purpose the operator takes a hollow tube, about four feet long, called a blowing-iron, and dipping it into the melting-pot, turns it round till a portion of the glass adheres to the surface. He then holds it near the ground, so that the mass is extended by its own weight, and blows strongly into the tube. The breath penetrating the red-hot mass, enlarges it, and it becomes an elongated sphere of the requisite dimensions. To separate this globe from the iron tube, an assistant dips the end of a solid rod into the glass-pot, and bringing out at its extremity some of the melted glass, thrusts it immediately against the globe at the part directly opposite the neck, so that it may be firmly united. The workman then wets a small piece of iron with his mouth, and lays it on the neck of the globe, and it immediately cracks off, leaving the globe open at the neck. This is again introduced into the fire by the new bar of iron, and afterwards rounded on the rails of a sort of arm-chair. In order to detach the foot from the iron, moisture is again applied, and it drops off. There is a final process called annealing, which consists in raising the temperature in a separate oven, and afterwards allowing the glass to cool gradually; it is less likely to break.

The glass-house and apparatus we have now been describing, is evidently much too costly an establishment for the performance of small experiments in glass-blown; the same objection exists to the common apparatus employed by the Italian barometer and thermometer makers, which is costly and dirty in the extreme.



In the accompanying figure we have delineated a simple process of glass-blowing, which Professor Partington employs in his public lectures, and which is admirably fitted for glass-blowing on a small scale. It consists of a Florence flask, with a tube fitted into a cork, and bent down from the mouth of the flask so that the point is brought into contact with the flame of a spirit-lamp beneath. A little spirit of wine, or water, is placed in the flask, and the lamp beneath speedily makes steam enough to impel a stream of fire against the glass to be blown. By this means, philosophical instruments in glass, which are usually of a costly character, may readily be constructed, either by the amateur or workman.

METHOD OF CATCHING WILD ANIMALS IN SOUTHERN AMERICA.

Men in an almost savage state, who exercise their faculties but in a few ways, become wonderfully expert in those pursuits which occupy the greater portion of their time. Some tribes excel in shooting with the bow, others in throwing the lance, and some blow pointed arrows through naked skin, with singular certainty.

But, perhaps, there is no country in which the truth of our observation is more apparent, than in the southern provinces of South America—the skill and precision with which the natives throw the lazo, or leatheren thong with a noose at the end, is so great, that no other weapon is, in general, necessary, to subdue the wild horse, the wild bull, or the fierce jaguar of the forest.

When South America was first discovered, the Spaniards set on shore some cattle, and horses, which, having since multiplied prodigiously, in the rich plains of this fertile country, are now hunted by the natives, chiefly for their skins and tallow, and the bodies left on the spot where they are killed, to be devoured by wild beasts. But it sometimes happens that a South American has occasion for a horse. When this is the case, he mounts one trained to the sport, and rides into the country till he meets with a herd of wild horses. He then separates one from the rest, pursues it at full speed till he comes within a proper distance, and throws his lazo over his head.

The moment he has done this, he stops his own horse, which, accustomed to the duty, stands in such a posture as is best calculated to sustain the expected shock, the lazo being fastened round its body. As soon as the wild horse has run the length of the thong, it is suddenly stopped with such violence as frequently to be thrown to the ground.

The hunter then alights, puts a bridle in its mouth, mounts it, and in spite of all the efforts of his captive to throw him, keeps his seat until he has completely subdued it, and rendered it subservient to his will. The animal is, ever after, docile and tractable.

The wild cattle are caught in the same manner, except that sometimes the lazo seizes them by the leg, sometimes by the horns, and sometimes round the body. So great is the skill of the hunter, that he can throw his weapon with unerring aim, so as to entangle any part of the body that he may choose.

But it is hunting the tiger, or jaguar, that calls forth all the skill and courage of the horse and his rider. In his natural state, the horse flies from this formidable foe; but, when trained by man to this sport, he faces the danger with great intrepidity, and contributes nearly as much as his master to the success of the combat.

That tribe of natives in Paraguay, called Guanches, are particularly addicted to this sport. They are brave and active, and used to encounter hardships of every kind, and their horses are trained so admirably as to obey the slightest indications of their master's will, and to advance boldly against their terrible enemy.

When the Guanche is about to set out on an expedition of this

kind, he furnishes himself with no provisions, although he may not see a human habitation for many hours. When he is hungry, he, with his ~~hand~~, ~~claws~~, a wild boar or bullock, cuts off a piece of its flesh by the spine, and sets the creature struggling to recover or perish, which always happens.

The roar of the jaguar soon announces to the Guanche the dread object of his pursuit. Directed by the sound, he advances till he comes in sight of the animal, when he makes his preparations for the dangerous encounter. As Mr. Arago, who has published a narrative of his游历 round the world, relates an animated description of this combat, we shall take the liberty of transcribing his words:

"The Guanche waits his time; he speaks, before him alone, so as to ready for his enemy—his terrible enemy—who, with his body almost touching the ground, is accustomed to stir any being within his approach, and provoking him—his eyes all intensely, he spires his vast power, and with the sound of his voice, so commanding at finding an opponent, he marks out the spot where the place on which he intends to spring."

"The Guanche is, at the same time, bold, prudent, and resolute—governing his astonished, but obedient mount, with his feet; he makes him retreat without turning his face from the tiger, who follows him step by step, watching for a false movement: The Guanche knows this, he therefore makes his horse rear up—the tiger darts forward and is caught; the horse then runs away, with all his power, dragging the ferocious beast after him.

"The Guanche sometimes turns round, and if his lazo has caught only the neck of the tiger, he flings a second, which binds the legs, and he is now conqueror.

"He now dismounts, arms himself with the two knives he carries in his boots, and sacrifices his victim. Having finished his day's work, he returns to Monte Video, sells the skin of the animal he has killed, caresses his horse, and hastens to seek new dangers.

"If, in the combat with the tiger, it happens that the lazo has missed, which is seldom the case, the Guanche arms himself with his two knives, and defends himself courageously. The horse sees the danger of his master, and, instead of galloping away, presents his own chest to the enemy—his blood flows, but his courage never for one moment fails him.

"If the tiger, exhausted by fatigue, allows the horseman a single moment's respite, it is all over with him; the lazo, which is always ready at the saddle, is again laid hold of, and for a Guanche twice to miss his aim, is almost unexampled."

Such is the narrative of Mr. Arago, which, from the particularity of the account, it is probable that he witnessed. The lazo is used in almost every transaction with animals, children being furnished with small ones, which they exercise on almost every creature that comes in their way.

TO STUDENTS.

So constantly are additions making to the discoveries of NATURALISTS and PHILOSOPHERS, and so numerous are the methods by which truth can be presented to the attention of the student, that new publications, if executed with judgment and ability, are still in request, and may prove highly beneficial, even though their subjects have been, in some measure, anticipated.

Sometimes the works already in existence are too voluminous, or too expensive for the use of a certain class; sometimes the language in which they are written is too abstruse for juvenile comprehension; sometimes the arrangement of their subjects may be objectionable and, not unfrequently, much error is introduced

amongst the truths that are advanced, so that new treatises are required, to rectify the faults of those that have preceded.

Our intention is the best service to the class of "young little men," that it will be the most difficult part of the Editor to make a judicious selection from the multitudes of books that offer themselves to his view, and yet to comprehend the subjects that arise from each, and to give a lucid explanation of each subject, without crowding the STUDENT with prolixity, or impeding it impeded by omitting any thing essential to its proper investigation.

Indications of the advantages that attend to young persons destined for the LIBERAL PROFESSIONS, from a general acquaintance with literature and science, and the facilities it affords for agreeable social intercourse. When the students of young persons who qualify to the CLASSICS, of such branches of EDUCATION as would qualify them for the pursuit of COMMERCE, they naturally set out by entering into the character of well-informed men, from their true ignorant of the subjects which are usually discussed in such society. They only were very liable to join in the conversation, for which they were ignorant, by profiting by what they heard, from the want of knowledge of the first principles of SCIENCE. Furnished with these, they can have a clue to such conversations, and by that attention which such an initiation is sure to excite, and by means of modest observations, and well-timed questions, they advance in KNOWLEDGE almost insensibly; render themselves agreeable to company, and acquire that ease both of conversation and behaviour, which characterizes the well-bred, and well-informed man.

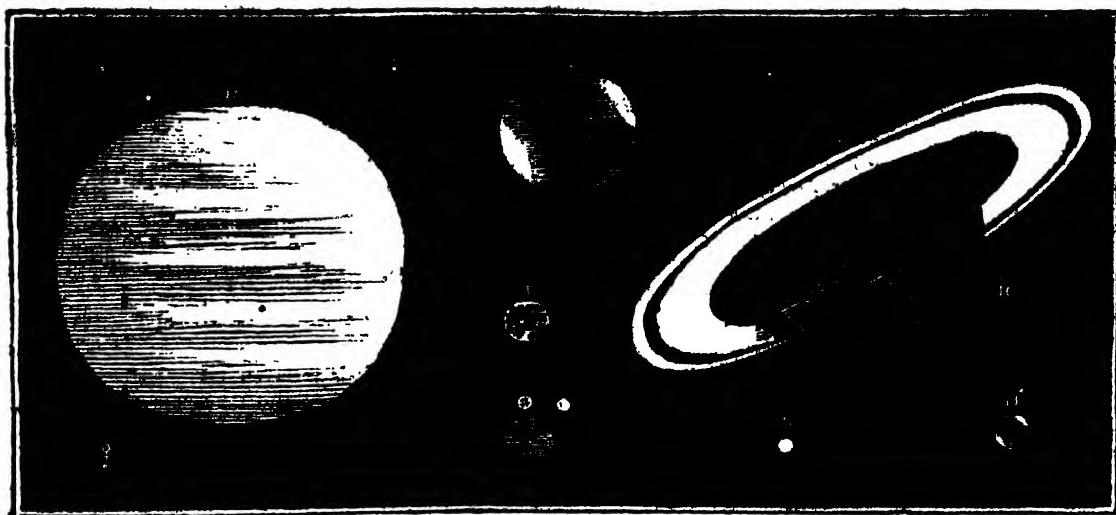
A general acquaintance with the rudiments of LITERATURE and SCIENCE, in all its most important branches, tends likewise to liberalise and enlarge the mind.

An exclusive attention to one branch only, has a directly contrary effect; for, though it may render the STUDENT master of the branch of learning to which he has thus devoted all the powers of his mind, it tends to contract the mind, to render it indifferent to every pursuit that is not in strict accordance with his favourite occupation, and to prevent him from tracing the wonderful affinity there is between the different branches of POLITE LEARNING, and how admirably they elucidate and strengthen each other.

From these observations it is by no means inferred that, because the ARTS and SCIENCES "bestow mutual assistance, and reflect mutual light on each other," they are all to be studied with equal application and ardour. The situation to which the STUDENT is destined in after life, must determine, in a great measure, the subjects to which their most earnest attention should be directed; but there is no more effectual method of becoming master of such subjects, than by gaining a general knowledge of the discoveries of the PHILOSOPHERS, the occupation of the man of business, and the pleasures of the man of taste. This knowledge will smooth the way to a profound acquaintance with that to which his mind must be more particularly directed, will assist him to overcome difficulties, otherwise almost insuperable, to discover beauties, which, under the circumstances, would have remained veiled from his sight, and to realize advantages, of which, without such KNOWLEDGE, he would have had no idea.

With the view of meeting the wants of the times, and to adapt our work to all classes of society, and to all ages, it is our intention to bring out a new series of works, upon the different subjects of LITERATURE, SCIENCE, and the ARTS, under the titles of "SELF-INSTRUCTOR."

RELATIVE SIZES OF THE PLANETS.



REFERENCES.

♀ Mercury.
 ♀ Venus.
 ♂ Mars.
 ♀ Jupiter.
 ♀ Saturn.

♂ Herschell, or Uranus
 ♀ Ceres.
 ♀ Pallas.
 ♀ Juno.
 ♀ Vesta.

When a man surveys the glorious firmament of stars, his sight represents them to be exceedingly small, but the mind at the same time contradicts the sight, by conceiving them to be of immense magnitude, and an oppressive sense of mysterious sublimity is the result. If, however, the spectator be a man of an active mind, he will not suffer his feelings to evaporate in simple wonder, but will ask himself the questions—How is it that my faculties are thus at issue?—the mind contradicting the sight!—which of them is true—the eye or the imagination?—how can their differences be reconciled?

Now, the human soul hates a boundary; it is infinite in its desires, and aided by this God-perceiving principle (*sure pledge of immortality*), the man whose curiosity we have just seen excited, tasks his ingenuity to contrive some means of ascertaining the size, situation, &c., of the rolling worlds above him. He begins with the eye, that marvellous organ

" Which at once takes in the landscape of the world
 At a small inlet, which a grain might close,
 And half creates the wondrous world we see."

He invents a TELESCOPE, and pointing the sight-invigorating tube "to heaven

" A broad and ample road, whose dust is gold,
 And pavement stars."

Lies plain before him:—the bright imaginations of his soul are satisfied, he finds the truth of his conjectures,—the little twinkling stars *are worlds!*

With this wonderful instrument in his hands, all things become new: the pure glory of the sun, shorn of his beams, is observed to be covered with black and shifting spots of an amazing size; the moon full of pits and mountains; Jupiter obscured by dusky belts; and Saturn surrounded by an enormous double ring. New stars, also, are discovered in every direction, moons are seen rolling with beautiful regularity round the planets; the relative magnitudes of the different orbs become apparent; and an endless round of wonders crowd upon the palpitating soul.

These phenomena have been erected by NEWTON, and others, into a beautiful system, called the "Solar System," and which we exhibited to our readers at p. 17, No. III., of this work, and we here present them with an engraving of the telescopic appearances of the planets showing their relative sizes; and also a table of their distances from the sun; their several diameters, and the period occupied by each in its revolution round the sun.

Mean Distances of the Times of the Sidereal Revolutions of the Planets from the Sun. Diameters of the Sun and Planets.

Distr. in Eng. Miles Millions		Days	Real Diam. Eng. Miles.
Mercury 36	Mercury	87.97	Sun 683,246
Venus 68	Venus	224.70	Mercury 3123
Earth 93	Earth	365.25	Venus 7702
Mars 142	Mars	686.98	Earth 7916
Vesta 223	Vesta	1334.20	Mars 4398
Juno 253	Juno	1591.00	Vesta Not known, but
Pallas 263	Pallas	1681.71	Juno probably none
Ceres 263	Ceres	1681.54	Pallas less than 100
Jupiter 485	Jupiter	4332.60	Ceres miles, nor more
Saturn 890	Saturn	10,759.00	Jupiter than 400 miles.
The Moon's distance from Earth 237,000	The Moon revolves about the earth in miles.	30,668.70	Saturn 91,522
		about the earth in 27 days 7' 716 hours.	Uranus 76,018
			The Moon 35,190
			The Moon 2160

It is our intention to give occasional papers on Astronomy, with a description of the apparatus by which the science has been brought to its present state of perfection. Thus:—

" We, though from heav'n remote, to heav'n will move
 With strength of mind, and tread the abyss above;
 And penetrate, with an interior light,
 Those upper depths, which nature hid from sight.
 Pleased we will be to walk along the sphere
 Of shining stars, and travel with the year;
 To leave the heavy earth, * * * * *

To look from upper light, and thence survey
 Mistaken mortals wand'ring from the way."

OVID.

WONDERS OF NATURE.

THE small works of the mighty Author of Nature are not less wonderful than the great; in some respects they are indeed more wonderful, as wanting the attribute of magnitude which forms part, and a considerable part of all merely material wonders. Of these little wonders, the earth, the sea, and the air are full; and that the multitude heed them not is the fault of the multitude. We shall occasionally notice some of these little wonders, and as we are anxious to add to knowledge, and not merely to retail it, scraps that which others have before told in connexion, we shall as often as possible, choose subjects upon which we can say something that has not been said before. For this purpose, we shall notice a species of

THE HAIRWORM.

Of the Hairworm, called *Gordius* by naturalists, from the singular coils into which it twists itself, there are several species described in the books; they all belong to that class of animal called *Annulata*, by modern naturalists, from their bodies being composed of a number of little rings.

The hair worms are all slender, not much thicker than a horse-hair, though one species (the Guinea worm), reaches four, or even six feet in length. Those I have found in England seldom exceed so many inches.

The Guinea worm (*Gordius Medinensis*), gets into the flesh of the human body, in warm countries, and causes a very disagreeable itching and if it be broken in the attempts to extract it, it works deeper, and produces ulcers, and sometimes gangrene and death. None of the British species have that dangerous habit, they are obscure, harmless creatures, and their habits are but imperfectly known.

The most common one is *gordius aquaticus*, which is found in ditches, brooks, and other shallow waters, in most parts of the country. The vulgar belief used to be that these worms were the hairs of the tail of entire horses, which, falling in the water, became animated there. That, of course, is not true.

The other species are *argillaceus*, which, from the name, lives in clay, or rather in the ooze at the bottom of ditches; *filum*, which means like a thread, and so may be any thing; and *lacteus*, which means whitish, and may also be descriptive of most of the species



That which is figured in the cut has not the abode attributed to any of the described species, and therefore it is the more worthy of attention. It is not found in clay; and it appears to avoid water. It appears on the grass or in shrubs after heavy thunder storms, which have followed dry and hot weather; and therefore there is reason to conclude that it is bred only within the earth, and that, driven from the earth by the shower it seeks to escape

the moisture by climbing up plants. Sometimes it appears in such numbers as to alarm the country folks, who think it has been raining little insects; and, if I mistake not, it got, in some part of South Wales, the blame of bringing "*CROZERA MORBUS*" on its little light back.

It has been more than usually abundant this summer. The first time that I saw it was about the middle of June; the rain had fallen in torrents all night; and in the morning, about two hours after sunrise, the blades on a little grass-plot were so thick with the hair-worms, coiling and twisting, in apparent search of something higher, that the whole seemed animated. After the shower had dried up, the worms disappeared, nor did they again make their appearance till about four weeks after, in the morning following a similar night of rain.

On that occasion I found them on the leaves of shrubs, at least four feet from the ground. They were most plentiful on the common laurel; and there were none seen on any of the coniferous evergreens; but whether that was choice or accident, I cannot say.

Observing one on the extremity of a laurel twig, wriggling, as shewn on the smaller leaf in the cut, I removed the two leaves and worm, and then made a sketch of them. Putting the worm on the other leaf, which was so far expanded as to be nearly flat, it put itself into two close coils, of a good many turns each, with the head advanced from the one, and the tail elevated from the other; and in that position it moved over the leaf, like a pigmy pair of spectacles on their brows. The means of its locomotion, without the undulations of the malvor, the aquatic gordius, or the elongations and contractions of the leech, and the common earthworm, would be no bad exercise for those who profess science in animal mechanics.* Indeed the whole habits of the animal are worthy of investigation: and this is the time for it, as I (at least), have not seen it until the middle of September; and never but in dry places, on the mornings, after summer showers. The propagation, food, and habits of the gordius, are little known; and even its uses in the economy of nature. That renders the study of it the more necessary, and that necessity is increased by the fact, that the species under consideration may be several of these that are set down as species in the books. These are distinguished by colour, and in worms colour is nothing. The common earthworm is red, in good, dry, vegetable mould, and pale and greenish in marshes. The red ones when put into moss and milk to render them tough for the angler, become pale; and when healthy they all have an equal play of colour in them. When found in the damp, the gordius were of a russet, with the head yellow; when found more elevated, and exposed to the sun, it was straw-coloured, with a fine red line marking the intestinal canal, (or blood); and when kept a day or two in paper that line had nearly disappeared. Some of the water species are said to be revivable, by humidity, after long being dead; but this species, after being in water for some time, showed no sign of returning life, but withered away on exposure to the air.

M.

* Mr. Rennie, of King's College, is numbered among your coadjutors. Surely nobody can be better qualified for solving this "Gordian knot" than he!—M.

To do an ill action, is base; to do a good one, which involves you in no danger, is nothing more than common; but it is the property of a good man to do great and good things, though he risks every thing by it.—*Marius*.

Whatever busies the mind without corrupting it, has at least this use, that it rescues the day from idleness; and he that is ever idle will not often be vicious.—*Johnson*.

HISTORY OF ASTRONOMY.

The science of Astronomy being so intimately connected with that of Geography, and so beneficial in its effects to the mind of man, deserves our utmost attention, and claims our highest admiration.

By this sublime science we are enabled to explore the whole universe, so far as the human eye can reach, pursue the different planets in their uniform course, and the devious comet, through the fields of ether, and also trace the laws by which the spheres perform their evolutions with so much order and harmony. These contemplations are worthy every rational being, and have for many ages engaged the minds of the most intelligent and enlightened men of every nation. Indeed, it is impossible to suppose a period, even in the infancy of the world, when the splendid objects which the heavens present did not attract the attention of mankind, and incite them to observe their motions, and their influence on sublunary affairs. Though the heavenly bodies cannot affect the events of our lives, nor indicate to us either good or bad fortune, they regulate the seasons, the divisions of time, the latitudes and longitudes of the different portions of the globe, and a variety of things highly interesting to mankind at large, and to scientific persons in particular. Without noticing the traditions and fabulous accounts of the state of Astronomy among the antediluvians, we would merely observe, that the Assyrians, Chaldeans, and Egyptians, are the earliest people who cultivated Astronomy, of whom we have any authentic account: their opinions were, however, exceedingly erroneous, and mixed with some of the wildest absurdities that could enter the imaginations of men. Yet they began early to make valuable observations on the periodical motions of the heavenly bodies, and on the phenomena of occultations, eclipses, &c. of the causes of which some of the more judicious formed tolerably correct notions. Several observations on lunar eclipses were made as early as B. C. 720, which were afterwards recorded by Hipparchus, and have been transmitted to us by Ptolemy.

Herodotus, and Diodorus Siculus speak of the Temple of Jupiter Belus at Babylon, and the lofty tower that surmounted it, as an observatory, from whence the Chaldeans observed the stars; the account by the latter of the golden statues that adorned it, is rather problematical and little to the purpose.

From the Chaldeans and Egyptians the science passed to the Phoenicians, who being a maritime and commercial people, studied it for the purpose of navigation; from their having sailed to high latitudes in the northern hemisphere, they had opportunities of observing stars invisible to the Chaldeans and Egyptians, and to them we are indebted for the discovery of the Polar star, so useful to direct the course of mariners, before the invention of the compass.

The Greeks, ever anxious to obtain information in every thing that related to the arts and sciences, travelled into different countries for the purpose of acquiring the *rudiments of knowledge*, which they afterwards improved with that diligence and skill for which they were remarkable. So early as the Argonautic expeditions, B. C. 1263, it is supposed that they were acquainted with the method of arranging the stars in constellations, but whether they were the inventors of this method, or merely adopted the inventions of others, is not recorded.

Thales, the founder of the Ionic Sect, who flourished about 600 B. C., was the first among the Greeks who cultivated this science on any thing like true principles. He explained the *Theory of Eclipses*, and gave an example of the method of cultivating and predicting them; he taught the course of the inequality of the days and nights. His pupil, Anaximander, who

taught between five and six hundred years, B. C., is supposed to have had a right idea of the *globular form of the earth*; to have invented maps and dials, to have discovered the *obliquity of the ecliptic*, with the equinoxes and solstices, and in conjunction with his master, Thales, to have greatly improved the arrangement of the stars into constellations. The planets Saturn, Jupiter, Mars, Venus, and Mercury, were known to the Chaldeans, but their motions and phenomena were not accurately observed above 200 years before the Christian era; the zodiac of the Greeks, previous to the time of Thales, is thought to have comprised only the apparent paths of the sun and moon; but at that period it assumed a more perfect form, and was divided into the twelve constellations, or signs of the zodiac, which are retained to this day; the inclinations of the orbits of the planets to the ecliptic was ascertained, but the nature of comets was ill understood, they being considered as mere transient meteors, portending some calamity, or at least an important event.

The name of Pythagoras, who flourished about 590 B. C., is illustrious, not only as the founder of a sect of Philosophers, but as a sagacious observer of the heavenly bodies, besides confirming the opinion of Anaximander, that the Earth is a globe, he discovered the *true System of the Universe*, which ignorance and bigotry so strongly opposed, that, with the exception of a few of his immediate disciples, it was rejected as absurd and impossible; though many years after, its truth was verified beyond contradiction.

It would be occupying a space, and the reader's time unprofitably, to narrate the absurd fancies and reveries of Anaximenes, Anaxagoras, and the Greek astronomers, who published conjectures concerning the heavenly bodies, which appear to us now, not only erroneous, but ridiculous.

Yet, though popular prejudice rendered it dangerous to teach the solar system, as discovered by Pythagoras, and that philosopher accordingly temporized, teaching publicly the generally received notions, and imparting the truth privately only to his confidential disciples, one of them, Philolaus, boldly declared his conviction, that the Earth revolved round the Sun; prejudice was, as yet, however, too strong for reason, and it was not received.

As one chief end of the study of Astronomy was to measure time with accuracy, great efforts were made to determine with precision, the apparent motions of the Sun and the real ones of the Moon, and to adjust them to each other. After numerous accurate observations, and many futile attempts, Meton of Athens, B. C. 430, invented the period of nineteen years, now called the *Metonic, or golden Cycle*, though many learned men deny him this honour, and attribute its invention to the Chaldeans many ages previous.

Though the Metonic Cycle was, at first, considered perfectly accurate, time discovered it to be defective; improvements were made in it by various succeeding astronomers, but no cycle has yet been discovered of sufficient accuracy to serve for nice computations.

(To be continued.)

If we consider the fixed stars as so many vast oceans of flame, that are each of them attended with a different set of planets, and still discover new firmaments, and new lights, that are much further in those unfathomable depths of ether, so as not to be seen by the strongest of our telescopes, we are lost in a labyrinth of suns, and worlds, and confounded with the immensity and magnificence of Nature.—*Addison.*

ON THE BEST MEANS OF ACQUIRING KNOWLEDGE.

A. What are the best means of acquiring Knowledge?

B. To him, who is really and zealously anxious to store his mind with KNOWLEDGE, every minute affords time; and every circumstance opportunity for its attainment. The crowded city, and the sequestered bower, alike offer food for observation, analysis, and comparison, and the stately palace of the monarch, and the bower that grows before the peasant's hut, are equally pregnant with moral and scientific instruction. But there are two principal means; namely, *Reading* and *Conversation*.

A. Which of these is the more useful?

B. The more generally useful is that of *READING*, which has this one great advantage over *CONVERSATION*, that, by it, we become intimate with the wise of other ages, and are made familiar with the deeds of generations which have long passed away; thus receiving at once *precept* and *example*.—*CONVERSATION*, however has this advantage, that by it you may be taught much upon matters not well discussed in books, or from their novelty not discussed at all. In conversation, moreover, that which, on first statement, appears dark, may be elucidated, and objections, being started, may be satisfied and obviated.

A.—Each having its peculiar advantages, which do you chiefly recommend, *READING* or *CONVERSATION*?

B.—Each having its peculiar uses both must be resorted to, by him who would improve his mind, and it is necessary to be diligent in both to make either effectually useful.

A.—Diligence in *READING* may be desirable, but *every one* is diligent in *CONVERSATION*.

B.—You were never yet more mistaken, for there are very few indeed who are able to converse well;—in short, to converse well a vast quantity of knowledge must be first attained; which can be only attained by industry, perseverance, and attention.

A.—I am greatly surprised at hearing what I confess is to me quite a new proposition?

B.—However much you are surprised, I assure you it is a very correct one.—How much of conversation is made up of wicked and disgusting ribaldry I trust you will never know. Do you not every day see persons engrossing the attention of a company and gabbling a heap of egotism, scandal, and small talk? Surely these perpetual talkers are not diligent in *CONVERSATION*? On the contrary, they are only busy in making a noise, and hurrying to waste time.

A.—But it is only, to say the least, ill-bred persons who engross attention, and prevent others from offering their remarks.

B.—There are, I am sorry to say, many persons who are, in every other respect, perfectly well-bred, who are, nevertheless, too much addicted to this very unpolite practice. But I particularized it only by way of example, not as being the only abuse of *CONVERSATION*. There is, no doubt, however, that it is one of the principal obstacles to our deriving real and permanent benefit from *CONVERSATION*.

A.—To avoid the abuses of conversation is there not an art?

B.—Yes; and a most important one.

A.—What are the best rules for conversing profitably?

B.—Good sense, politeness, and a real anxiety to obtain information.) The *first* will prevent you from introducing trifling and ridiculous inquiries; the *second* will induce you carefully to avoid all topics which can give pain, or annoyance to others, and the *third* will cause you to listen attentively, and without interruption to every speaker. You will perhaps imagine that anxiety for information and patient attention are incompatible, but a little reflection,

will undeceive you. If you are at a loss to ascertain the nearest rout to any place to which you are going, and inquire the way, you do not inflict upon the person whom you ask to direct you—a long detail of domestic habits and bodily ailments?

A.—That would be ridiculous certainly.

B.—Yet, such, or something equally unimportant, is the every day gossip of two-thirds of our acquaintance; and such it would be were *BACON*, *NEWTON*, *PORSCHE*, *ADDISON*, and *JOHNSON*, their auditors. Into whatever company you shall happen to fall, lead the discourse towards that with which your companion is most familiar, and you will at once compliment him and profit yourself. Keep moral company, ask modestly, listen attentively, treasure up what you hear, shun all idle talk, and unmeaning gossip during the happy days of your youth, and you will acquire such a store of knowledge as will be an advancement and a safeguard to you, when you mix in the toils of life, and enable you in your old age to be the instructor of others.)

AN ECDOTE.

I happened the other day to call in at a celebrated coffee-house near the Temple. I had not been there long, when there came in an elderly man very meanly dressed, and sat down by me. He had a threadbare loose coat on, which it was plain he wore to keep himself warm, and not to favour its under-suit, which seemed to have been his contemporary. His short wig and hat were both answerable to the rest of his apparel. He was no sooner seated, than he called for a dish of tea; but, as several gentlemen in the room wanted other things, the boys of the house did not think themselves at leisure to mind him. I could observe the old fellow was very uneasy at the affront, and at his being obliged to repeat his command several times to no purpose; till at last, one of the lads presented him with some stale tea in a broken dish, accompanied with a plate of brown sugar; which so raised his indignation, that, after several obliging appellations of dog and rascal, he asked him aloud, before the whole company, why he must be used with less respect than that sot there, pointing to a well-dressed young gentleman who was drinking tea at the opposite table. The boy of the house replied with a great deal of pertness, that his master had two sorts of customers, and that the gentleman at the other table had given him many a sixpence, for wiping his shoes. By this time the young templar, who found his honour concerned in the dispute, and who saw that the eyes of the whole coffee-room were upon him, had thrown aside a paper he had in his hand, and was coming towards us, whilst we, at the table, made what haste we could, to get away from the impending quarrel, but were all of us surprised to see him, as he approached nearer, put on an air of deference and respect. To whom the old man said, "Hark you, sir! I'll pay off your extravagant bills once more; but I will take effectual care, for the future, that your prodigality shall not spirit up a parcel of rascals to insult your FATHER."

The apple was a native of Italy; and when the Romans hadasted the richer flavor of the apricot, the peach, the pomegranate, the citron, and the orange, they contented themselves with applying to all those new fruits the common denomination of apple, discriminating them from each other by the additional epithet of their country.—*Gibbon*.

I am sent to the ant, to learn industry; to the dove, to learn innocence; to the serpent, to learn wisdom; and why not to the robin-redbreast, who chants it as delightfully in winter as in summer, to learn equanimity and patience?—*Warwick*.

IMPROVED PHOTOMETER.



The instrument represented above is likely to become a very important auxiliary in the hands of the meteorologist. It is employed to indicate the illuminating power of any burning body by the slight elevation of temperature which results from an increase of light. It consists of a differential thermometer, having one of its balls diaphanous, and the other coated with China ink, or rather blown of deep-black enamel. The rays which fall on the clear ball pass through it without suffering obstruction; but those which strike the dark ball are stopped and absorbed at its surface, where, assuming a latent form, they act as heat. This heat will continue to accumulate till its further increase comes to be counterbalanced by an opposite dispersion caused by the rise of temperature which the balls have acquired. At the point of equilibrium, therefore, the constant accessions of heat derived from the action of the incident light, are exactly equalled by the corresponding portions of it again abstracted in the subsequent process of cooling. But in still air, the rate of cooling is, within moderate limits, proportioned to the excess of the temperature of the heated surface above that of the surrounding medium. Hence the space through which the coloured liquid sinks in the stem will measure the momentary impressions of light, or its actual intensity. To prevent any extraneous agitation of the air from accelerating the discharge of heat from the black ball, and thereby diminishing the quantity of aggregate effect, the instrument is always sheltered, and more especially out of doors, by a thin glass case. The addition of this translucent case is quite indispensable. It not only precludes all irregular action, but maintains, around the sentient part of the instrument, an atmosphere of perpetual calm.

HOTTENTOT THRASHING.

MANY of the customs mentioned or alluded to in scripture still obtain in some parts of the world; and some very important lights have, in consequence, been thrown upon some passages of the Old Testament by the observations made and recorded by recent travellers.

The manner in which, in ancient times, the grain was separated from the ear, is alluded to in a manner too plain to admit of mistake, in that inhibition of scripture, " thou shalt not muzzle the ox that treadeth out the corn." Though in most, if not all, civilized countries, this primitive mode of thrashing has fallen into utter desuetude through the inventions of machinery, there are some barbarous and half-civilized countries in which it is still retained. The Hottentots employ horses to thresh their grain; and the operation is thus conducted: a round and perfectly level flooring, of a proper extent, being laid down, a palisade, from three to four feet in height, is erected all round it. Several hundred sheaves of corn being laid upon this flooring, the horses of the farm are collected and turned in, and a man or two going in with them, keep them running over the corn, and keep it properly disposed for them to

tread upon it, until the whole is properly threshed. It is then removed, and fresh sheaves put in; and this is repeated until the whole required threshing is performed.

Probably horses are better fitted to perform this kind of labour than *oxen*; but we think that our young readers will agree with us in deeming the flail a better thrashing instrument than either one or the other of them. The Hottentots, however, know nothing of flails; and if they did, as they are not very partial to personal exertion of a very laborious kind, it is very likely that they would prefer their present mode of procedure.

THE MOUSE.

This humble little animal is a beautiful instance of the simple but efficacious means by which nature adapts all its creatures to the peculiar wants of their existence. Living by plunder, and surrounded by natural enemies, it requires that his organization should enable him to combat successfully against such a combination of difficulties. We accordingly find him gifted with powers especially designed for that purpose. His feet are highly elastic, and the toes curiously cushioned, like the cat, for noiseless motion. His ears are prominent and expanded, and his eyes full and brilliant; these enable him to elude the vigilance of his foes; but a more obvious instance occurs in the structure of the hind legs, which are more than double the size and strength of the fore ones, giving him the power of making those surprising leaps which the sudden spring of a stealthy cat renders so often necessary. This provision alone saves the race from extinction.

Another admirable instance of design occurs in the structure of the jaws and teeth. The few midnight hours allowed for feeding, would not have been sufficient had he been destitute of the proper tools for effecting his burglarious entrances to our cupboards. In his foraging expeditions, he has not only to steal his way through the camp of the enemy, but also to storm the citadel: his supplies lie fast locked in a close cupboard, and however much hunger may press, before he can satisfy it, he must first *gnaw* his way through the cupboard door. To enable him to do this, he is armed with four cutting teeth, exceedingly large and strong, but this alone would not have been an adequate provision:—the mighty steam-engine is as powerless as an infant without the motion of steam; and in like manner their teeth, admirably adapted as they are for cutting and sawing, would have been equally useless, had they not been furnished with strong muscles for moving them. The muscles of the lower jaw are very powerful, and firmly inserted into grooves and prominences in the bone contrived for that purpose. Thus equipped, he bores his way through strong wooden planks, with wonderful ease and celerity. There are also many other things about this creature deeply worthy of admiration; such as the muscular apparatus for lifting the upper lips, and unsheathing the teeth, with the division of the lip, perfecting the operation;—the looseness of the skin and the smoothness of the hair, enabling him to slip easily through narrow holes and crevices; and the colour of his hair, confounding him with the colour of those objects by which he is usually surrounded, and so enabling him to elude the vigilance of his pursuers. But enough has been said to show "how express and admirable" are the means by which the Infinite and Almighty Creator has successfully shielded him from injury and contributed to his pleasures. We shall, however, return profitless from this investigation, if Divine worship be the only sentiment induced: we should adore in *deed* as well as *thought*, and learn to respect these works of an Almighty hand. We should regard every thoughtless, but not the less cruel blow, inflicted on the least among these as contemptuous insolence towards God, every way debasing and unworthy of the human mind.

Y,

THE GUIDE TO KNOWLEDGE.

EDITED BY MR. W. PINNOCK,

AUTHOR OF "PINNOCK'S CATECHISMS," "GRAMMAR OF GEOGRAPHY AND HISTORY," ETC., ETC.

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A BRIEF HISTORY OF ENGLAND.

INTRODUCTION.

As a knowledge of History is universally admitted to be of the greatest utility to Society, and particularly that which relates to one's native country, it is conceived, that the following brief *Essay* on the *HISTORY OF ENGLAND* will not be found inappropriately introduced into "The Guide to Knowledge;" and we hope that our readers will find it both useful and amusing.

Besides, the history of our country may serve as an epitome of that of the whole world, as we are not inferior to any nation on the globe, either in *Literature*, *Science*, and *Arts*, or in *Arms*, and can boast of heroes as illustrious, and of men as eminent and transcendent in science, as any people either in ancient or in modern times. To what nobler purpose then, can we devote our leisure hours, than that of surveying the progress of our country in literature, science, and the arts, through a long course of time? What can more influence the heart with love of virtue, or excite aversion to vice, than the striking display of characters in history? In short, what better inducements can we have to make us good subjects, than a review of our inestimable privileges and liberties? Privileges that should endear the constitution of this nation to every Briton!

When we consider the fortitude and wisdom of the Great Alfred; the conquering prowess of Edward the Third; the noble bravery and generosity of the Black Prince; the courage and affability of Henry the Fifth; and the unshaken firmness of Elizabeth; we are lost in surprise and admiration, and almost inclined to question the veracity of the relation. We are equally struck when we behold the exalted intrepidity of our admirals and generals; the profound abilities of our legislators and politicians; the deep researches of our philosophers; the wisdom and integrity of our judges and magistrates; and the honesty and disinterestedness of our citizens.

If such, then, are the advantages resulting from the study of history, it is hoped, that every attempt to illustrate this science, will not only meet the indulgence, but also, the approbation of the public. This little work differs very materially from all others; particularly in the conciseness of its style, and in the cheap form in which it is published. We also beg to call the attention of our readers to the "*Genealogical Table*," which we strongly recommend should be committed to memory; and those who shall attend to our suggestion, will, we are sure, be much pleased with the result.

A BRIEF HISTORY OF ENGLAND.

CHAPTER I.

The Island of GREAT BRITAIN is situated in the Atlantic Ocean, and was, at the earliest period of its history, inhabited by barbarous nations, distinguished by the general names of *Britons* and *Caledonians*. The history of the southern portion of this island is usually denominated the "*History of England*," though the country did not receive that name until the time of the *Saxons*.

English History may be divided into twelve heads, or periods.

I. That of the *Britons*, before the Roman invasion.

II. From the arrival of the *Romans* in Britain, to their departure.

* This brief sketch of the History of England, will be comprised in three numbers, and the "*Table*" here referred to will appear as soon as the engraving can be finished. Our next No. will contain fourteen portraits.

III. From the departure of the Romans, to the formation of the *Heptarchy*, or division into seven kingdoms.

IV. From the formation of the *Heptarchy*, till their union under *Ecgbert*, as sole monarch.

V. The *Saxon Dynasty* from the death of *Ecgbert*, to its temporary removal by the *Danes*.

VI. From the usurpation of the *Danes*, to the restoration of the Saxon line.

VII. From the restoration of the *Saxons*, to the Norman Conquest.

VIII. From the Norman Conquest, to the contest between the houses of York and Lancaster.

IX. From the commencement of that contest, to the Union of the two houses, by the marriage of *Henry VII*.

X. From that event, to the extinction of the House of *Tudor*, by the death of *Elizabeth*.

XI. From the accession of *James I*, to the expulsion of *James II*, or the House of *Stuart*.

XII. From that period to the present time, including the Houses of *Orange*, *Stuart*, and . In the course of which, *SCOTLAND* and *IRELAND* have been united to *ENGLAND*, and governed by the same legislature.

CHAPTER II.

The island of Great Britain, which is now so justly celebrated as the seat of wealth and freedom, is supposed to have received the name of *Britain* from the *Isles*, which the Greeks and Romans called *Britannia*, or the British Isles.

That part of the island of Great Britain, now called England, was, in remote ages, named *Albion*, but the appellation was afterwards changed for that of *Britain*.

As the manners of the southern *Britons*, were, in many respects, similar to those of the *Gauls*, they are supposed to have been of Gallic origin: those of the north assimilated more to the *Germans*.

Some of their customs, were, however, peculiar; they wore only loose garments of skins, and stained their bodies with the juice of a weed, now called *woad*, which gave them a blue tint. Some adorned themselves, likewise, with rude figures of the sun, moon, stars, and animals.

As the *Britons* practised no agriculture, they lived principally on flesh and milk; much of the former they obtained by hunting; the rest was supplied by their flocks and herds.

Along the southern coasts, the *Britons* were partially civilized by their intercourse with the Phoenicians and *Gauls*, who traded with them for tin, &c. But in the interior of the country, they lived in the heart of forests, in little thatched huts, barely sufficient to shelter them from the inclemency of the weather.

The *Britons* were warlike, and used chariots in battle, which they managed with great dexterity, driving them furiously into the enemies' ranks; they armed themselves with a small shield, lance, and sword, but despised armour for the body.

The religion of the *Britons* resembled that of the *Gauls*. Their chief deity was *Tumatis*, or *Taran*, the Thunderer. To *Andate*, their goddess of victory, they sacrificed their prisoners of war.

The priests of their religion were called *Druids*, either from the British word *Dervu*, or the Greek word *Drus*, each of which signifies an *Oak*. The *Druids* were the interpreters of religion, the judges of the land, and the instructors of youth.

They taught the immortality of the soul, and that, at death, it passed into the body of some other new-born animal: this is called transmigration. They revered the *Oak* as the emblem of their chief deity, and resided in the gloom of forests, or of groves.

The whole island was divided into a number of petty indepen-

dent states, each under its own chieftain. These had frequent wars with one another, but, on the approach of a common foe, one was chosen as commander-in-chief of the whole assembled forces.

After the invasion of Britain by the Romans, the Druids appear to have been peculiarly the objects of their dislike, in consequence of their using their influence with their countrymen, in stirring them up to resist their oppressors.

To shun the persecutions and severities of the Roman governors, these venerable priests took shelter in the isle of *Monu*, now called *Anglesea*, whither they were pursued, and after a fierce contest, completely extirpated by *Suetonius Paulinus*, A.D. 61.

PERIOD II.

FROM THE ARRIVAL OF THE ROMANS TO THEIR DEPARTURE.

JULIUS CÆSAR, a celebrated Roman general,* having subjugated Gaul, now called France, was desirous of adding Britain to the Roman dominions: for this purpose he made a descent upon the island, with a strong body of troops, but, as his preparations had given the Britons an intimation of his design, he found the shore defended by a numerous army, under the command of *Cassibelan*, one of the petty princes of the country.

On the attempt of the Romans to land, they were opposed with much vigour and resolution by the Britons, that, in spite of the advantages they possessed in their superiority of arms and discipline, they seemed little inclined to advance, and it required all the influence of Caesar to overcome their reluctance.

At length, they succeeded in repelling their half naked assailants, and in subsequent contests, the Britons were so completely defeated, as to induce them to sue for peace.

A violent storm having shattered Caesar's fleet, he found it convenient to accede to their request, that he might return to Gaul and repair his damaged ships.

During his absence, the Britons made great preparations to oppose his return; they were, however, ineffectual. The Romans were everywhere victorious, and Caesar burnt *Verulamium*, now *St. Albans*, the capital of *Cassibelan*.

Caesar, considering it imprudent to absent himself too long from Gaul, did not complete the conquest of Britain, but, after imposing an annual tribute, left the island. More important enterprises afterwards prevented his return.

The civil wars of Rome, prevented any attention to the affairs of Britain for some time, and the prudent policy of the Britons, who continually sent presents and submissive messages to the emperors, served to divert the threatened danger of subjugation.

At length the emperor Claudius resolved on bringing the island

* The ROMANS were a celebrated people of Italy; their seat of empire was *Rome*. At the time of their invading Britain, they were in their highest power of glory, having then conquered all the then known world, and extended civilization into countries buried in ignorance: till sinking beneath the weight of its own greatness, their empire was divided into those sovereignties which have since flourished in Europe. The Romans harassed Britain from about 50 B.C. till A.D. 488. Among the most celebrated of the British kings who opposed the invasion of the Romans, were *Cassibelan* and *Caractacus*. The Britons, under Caractacus, made a very obstinate resistance against the Romans, for about seven years, but were at last subdued, and their leader taken prisoner, and sent to Rome. A noble stand was also made against them by *Boudicca*, queen of one of the British tribes, who successfully attacked several of the Roman settlements, and entering London, already a flourishing colony, reduced it to ashes, and put to death all the settlers, to the number of 70,000. *Suetonius*, however, shortly after, avenged their death, in a decisive battle with the British heroine, wherein 80,000 of her followers perished, and *Boudicca*, to avoid falling into the hands of her victor, destroyed herself by poison. Many of the once celebrated Roman cities, which flourished in Britain, are now fallen into decay and into dust; one of these is *Silchester*, near Kingsclere, in Hampshire, where cornfields and pastures cover the spot once adorned with public and private buildings, all of which are now wholly destroyed! Like the busy crowds who inhabited them, the edifices have sunk beneath the fresh and silent greenward; but the flinty wall which surrounded the city is yet firm, and the direction of the streets may be discerned by the difference of tint in the herbage, and the ploughman turns up the medals of the Caesars, so long dead and forgotten, who were once the masters of the world. The most ancient historian of the Britons is *Gildas*, who was the son of one of the British kings.

under the Roman yoke, and for this purpose, sent *Aulus Plautius* with an army of about 20,000 men to complete its conquest.

The Britains, commanded by *Caractacus*, made a determined resistance, but they were defeated, and their prince carried captive to Rome. After great progress had been made in the conquest of the island, by *Plautius* and *Vespasian*, the emperor himself arrived in *Britain*, A.D. 44, and obtained a signal victory; he staid but sixteen days, and left *Plautius* its governor.

From this period *Britain* was a Roman province, for about 400 years; the inhabitants became civilized, and learnt the arts and sciences from the Romans, and were removed with the residence of several of the emperors. *Constantine the Great* was born at York.

But the Roman empire having suffered greatly from the invasion of Barbarians, and from internal commotions, the Emperor *Honorius* was compelled to recall his troops from Britain, and leave the Britons to their own government, A.D. 410.

A long season of dependance on the Roman power, however, had so enervated this once hardy people, that they found themselves unequal to repel the cruel incursions of the northern nations, the *Picts* and *Scots*.

After in vain applying for assistance from *Rome*, and enduring unheard of outrages from their savage invaders, their king, *Vortigern*, determined to solicit aid from the Saxons, and this brings us to our "THIRD PERIOD."

PERIOD III.

FROM THE DEPARTURE OF THE ROMANS, TO THE FOUNDATION OF THE HEPTARCHY.

The SAXONS* were a people of *Germany*, celebrated for their ferocity, and terrible for their piracies and cruelty; yet such was the dreadful situation of *Britain*, that it was thought advisable to seek the aid of defenders like these.

The invitation of *Vortigern* was eagerly accepted, and *Hengist* and *Horsa*, two valiant chiefs, with their followers, came to his assistance, drove back the invaders, and received as a recompence, the Isle of Thanet.

Allured by the agreeable settlement these adventurers had acquired, great numbers of their countrymen came over, and soon became as formidable to the Britons as the Picts and Scots had been.

Too late sensible of their error, the Britons attempted to oppose those new tyrants, but they were everywhere defeated, and their country was ravaged with fire and sword. In one of these contests *Horsa* was slain.

Amongst those who boldly opposed the inroads of the Saxons was the celebrated king *Arthur*, of whose exploits we have many fabulous accounts; but his valour and conduct could not long avail against the numerous swarms of *Saxons* that continually arrived from *Germany*, and supplied the loss of those that fell in battle. The remnant of the Britons, therefore, took refuge in *Wales* and *Cornwall*, and left their invaders in possession of the rest of the country.

The conquest of *Britain* was not, however, an easy achievement; it occupied many years, and the different chieftains, as they became masters of an extensive territory, erected it into a kingdom. At length, the whole of the kingdom was parcelled into *Seven Kingdoms*—*Kent*, *Sussex*, *Essex*, *Wessex*, *Mercia*, *East Anglia*, and *Northumberland*: these were called, from their number, the *Heptarchy*.

About A.D. 570, *St. Augustine*, with some other missionaries, arrived from Rome, to convert the *Saxons* to Christianity. *Ethelbert*, king of *Kent*, gave them a favourable reception, and soon became a convert, and many of his subjects quickly followed his example.

Obs. During the contentions of the *Saxons* with the *Britons*, the

* The *Saxons* originally were a tribe of Scandinavians, who, in the decline of the Roman Empire, settled in the northern parts of Germany, under the several names of *Saxons*, *Angles*, and *Jutes*, or *Danes*; hence, it will be observed, that the above people, by whom Britain was subdued, originally constituted but one nation, speaking the same language, and ruled by monarchs who all claimed their descent from the deified monarch of the *Teutons*, *Woden* or *Oden*. The *Jutes* dwelt in the peninsula of Jutland, the *Angles* in Holstein; but the *Saxons* were more widely dispersed throughout the northern parts of Germany.

Roman empire had been dissolved by the *Goths, Vandals, Huns, &c.* from the north of Europe and Asia, who, on its ruins, laid the foundation of the several states of Europe.

PERIOD IV.

FROM THE FORMATION OF THE HEPTARCHY, TILL THEIR UNION UNDER EGBERT.

The existence of so many petty kingdoms, naturally gave rise to perpetual wars, and Britain became a scene of devastation and blood. It would be tedious, and unprofitable to particularize these sad scenes, such only will therefore be mentioned as led more immediately to the consolidation of the several states.

Urged by remorse for their cruelties and oppressions, and instigated by the Monks, and the superstition of the times, no less than thirty Anglo-Saxon kings resigned their crowns, and retired into monasteries. By such practices most of the royal families became extinct.

In consequence, the thrones of all the kingdoms were seized by usurpers, except that of *Wessex*, which was occupied by *EGBERT*, the sole descendant of the first Saxon kings. The weakness of these usurpers afforded him a tempting opportunity of subduing their dominions, which, after repeated provocations, he successfully embraced.

Victory followed victory, until at length, A.D. 827, he was crowned *King of all England*. He suffered some of the vanquished monarchs to retain their titles, but they were considered as *vassals*, and paid tribute.

In the reign of this monarch, the *Danes* began to make descents on the island, but he met, and conquered them, so that the latter part of his life was passed in tranquillity.

EGBERT died, after a prosperous reign of thirty-eight years, and was buried at *Winchester*. *South Britain* was first denominated *ENGLAND* in this reign.

The contemporary sovereigns of Europe towards the close of the Saxon Heptarchy, were *I. V.*, Emperor of the East*; the Empire of the West was revived by *Charlemagne*, king of France, A.D. 800; *Pope Gregory*; *Afonso II.*, king of Leon and Asturias, in Spain; *Sewardus*, king of Denmark; *Sweat*, king of Sweden; *Lesco*, duke of Poland; *Dougal*, king of Scotland; *Hugh V.*, king of Ireland; *Morwyn*, king of Wales.

PERIOD V.

OF THE SAXON DYNASTY FROM THE DEATH OF EGBERT TO ITS TEMPORARY SUSPENSION BY THE DANES.

ETHELWOLF, the only surviving son of *EGBERT*, succeeded his father, but, in a short time, found his tranquillity interrupted by a new invasion of the *Danes* in 840.

After many bloody struggles with these lawless freebooters, *ETHELWOLF*, in 851, resigned the government of *Essex*, *Kent*, and *Sussex*, to his natural son *ATHELSTAN*, and with his assistance gave the *Danes* a decided overthrow.

Grateful to Providence for this success, he made a pilgrimage to *Rome*, with his son *ALFRED*, and engaged for himself, and his successors, to pay an annual tribute to the *Pope*, which was called *Peter's Pence*.

On his return, he found that *ATHELSTAN* was dead, and that his rebellious nobles had placed his son *ETHELBALD* on the throne; to avoid a civil war, he acquiesced in this measure, and contented himself with the provinces he had before assigned to *Atthelstan*. Two years after this event, he died, A.D. 857, and was buried at *Steyning* in *Sussex*.

ETHELBALD continued on the throne of *Wessex*, but *ETHELBERT*, his brother, succeeded to that of *Kent*, left by his father. *Ethelbald* reigned, however, but two years and a half after his father's death, when the whole kingdom came under the dominion of *ETHELBERT*.

The reign of this prince was cruelly disturbed by the inroads and ravages of the *Danes*; at first he boldly repulsed their troops, but afterwards had recourse to the fatal expedient of attempting to purchase their forbearance by sums of money. *Ethelbert* died

A.D. 866, and was buried at *Sherborne*. He was succeeded by his brother *ETHELRED*.

ETHELRED succeeded to a very distracted kingdom, continually harassed and devastated by the piratical *Danes*. In one year he fought nine pitched battles; and in the sixth year of his reign was mortally wounded in an engagement with these unprincipled invaders.—A.D. 872. He was buried at *Winborne*.

This king is said to have created his brother *Alfred*, earl, which is the first mention of that title in history. He was succeeded by *ALFRED*, who was afterwards called "*Alfred the Great*."—He was buried at *Sherborne*.

The contemporary sovereigns of this reign were *Michael III.*, Emperor of the East; *Louis II.*, Emperor of the West; *Nicholas I.*, Pope; *Charles I.*, king of France, A.D. 841; *Garcia*, king of Navarre; * *Ordoño*, king of Leon and Asturias (now part of modern Spain); *Nechtan*, Duke of Bohemia; *Piast*, Duke of Poland; *Charles VI.*, king of Sweden; *Canute I.*, king of Denmark; *Constantine II.*, king of Scotland; *Malachi III.*, king of Ireland; *Roderick II.*, king of Wales.

PERIOD V. (CONTINUED).

ALFRED.

ALFRED succeeded to a kingdom, depopulated, desolated, and still overrun by merciless plunderers. He made many vigorous efforts to free his beloved country from this dreadful scourge, but, for some time, they were unavailing.

So far, indeed, was he from success, that he was reduced to the last extremity, and obliged to take refuge in the cottage of a neath-herd, in the isle of *Athelney*, in *Somersetshire*, where he was treated by those ignorant of his quality, with great indignity.

Having remained in this obscure retreat until the search of the *Danes* for him became less vigilant, he adopted the bold and dangerous measure of entering the Danish camp, as a wandering minstrel, and having, in this disguise, reconnoitred their strength, and observed their careless confidence, he retired unsuspected.

Secretly assembling his nobles, and collecting an army, he suddenly fell upon the *Danes*, when they little expected such an event; totally defeated them, and preserved his kingdom from their oppressive intrusions.

From this time, he applied himself to the arts of peace and good government, founded the *University of Oxford*, divided the kingdom into counties, hundreds, and tithings, encouraged learning, and learned men, and wrote several books for the instruction of his people. He died A.D. 900, after a reign of 28 years, and was buried at *Winchester*. He was succeeded by his son *EDWARD*.

Among the cotemporary sovereigns of Alfred were *Leo VI.*, Emperor of the East; *Arnold*, Emperor of the West; *Fortunio*, king of Navarre; *Necklan*, Duke of Bohemia; *Adrian II.*, Pope; *Alfonso the Great*, King of Leon and Asturias; *Charles III.*, of France; *Olaus*, King of Sweden; *Lesco*, Duke of Poland; *Hugh VI.*, King of Ireland; *Hrolf II.*, King of Denmark; *Dowold III.*, King of Scotland; *Roderick II.*, King of Wales, A.D. 843. This king, at his death, which happened A.D. 877, divided *Wales* into three principalities, viz. *North Wales*, *South Wales*, and *Powys Land*, and bestowed them on his three sons; from which time no king appeared in *Wales*.

EDWARD found, on his accession, a competitor for the crown, in the person of *Ethelward*, the son of his uncle *ETHELBERT*. After several engagements, however, the latter was slain in battle in 905. The reign of *EDWARD* was a turbulent one, as his kingdom was invaded by the *Irish*, *Danes*, *Scots*, and *Welsh*.

By his valour and activity, he at length succeeded in delivering his country from these formidable foes, and after a reign of twenty-five years, he died in 925, and was buried at *Winchester*. He is usually known by the name of "*EDWARD THE ELDER*".

He was succeeded by his eldest son *ATHELSTAN*, who had, like his father, to combat with the turbulent *Danes*, that had settled on his dominions. He repressed the incursions of the *Scots*, and obliged the *Welsh* king *Hegel* to pay him tribute. This prince died A.D. 940, and was buried at *Malmesbury*.

1. *EDMUND*, the brother of *ATHELSTAN* succeeded him. He was greatly annoyed by the *Northumbrian Danes*, but having

The kingdom of *Navarre* was situated between *France* and *Spain*, and comprised the southern part of modern *France* and the northern part of modern *Spain*. It was divided into two parts, by the *Pyrenees*, and was called the *Upper* and *Lower Navarre*. *Lower Navarre* belongs to *France*, the *Upper* to *Spain*.

* The Eastern Empire of the Romans comprised European Turkey, part of Italy, &c. Its capital was Constantinople.

subdued them, he bestowed the counties of *Cumberland* and *Westmoreland* on *Malcolm*, king of *Scots*, on condition that he should do him homage, and protect the north of *England* from the incursions of the *Danes*.

After a reign of seven years, *Edmund* was assassinated at a feast near *Gloucester*, by *Loyf*; a robber, who had audaciously returned from banishment, and imprudently intruded into the king's presence. A.D. 948.

His sons being too young to reign, the throne was mounted by his brother *Ethelred*, who did nothing remarkable. He died in 955, and was buried at *Winchester*. He was succeeded by *Eadw*y, the son of *Edmund*.

Among the cotemporary sovereigns of *Edmund* were *Constantine VI.*, Emperor of the East; *Otho I.*, Emperor of the West; *Pope John XII.*; *Louis IV.*, King of France; *Garcia I.*, King of Navarre; *Malcolm I.*, King of Scotland; *Harold III.*, King of Denmark; *Eric VIII.*, King of Sweden; *Donoughue*, King of Ireland.

EADWY succeeded to the throne when he was only sixteen years of age; and had he been left to the natural bent of his own inclinations, he would undoubtedly have governed well; but being an enemy to the superstitions of the *monks*, they became his inveterate foes.

The *monks*, however, headed by *Dunstan*, abbot of *Glastonbury*, had become so powerful, that they thwarted the king in all his measures, took from him his queen, and instigated his brother *Edgar* to rise in rebellion against him.

These troubles, no doubt, hastened his death, which took place in the twentieth year of his age, and the fourth of his reign, A.D. 959. He was buried at *Winchester*. He was succeeded by *Edgar*, the younger son of *Edmund* the First.

EDGAR, although only sixteen years of age when he ascended the throne, soon discovered an excellent capacity for government; he maintained a considerable body of well disciplined troops, and supported a formidable navy. His power was so much respected, that the king of Scotland, the princes of *Wales*, those of the Isle of Man, and even the king of *Ireland*, with whom *England* had hitherto had little or no intercourse or commerce, paid submission to him. The *monks* who had been banished by *Edwy* were now recalled, and *DUNSTAN* was made archbishop of *Canterbury*. He also built forty monasteries. He died A.D. 975, and was buried at *Glastonbury*.

It is related of this prince, that being at *Chester*, and making an excursion by water, he was rowed down the river *Dee* by eight princes, who were tributary to him.

EDWARD his son succeeded when only fourteen years of age. His reign was rendered unhappy by the dissensions of the *clergy* and the *monks*, and by the opposition of his mother-in-law, *Elfrida*, by whose orders he was assassinated, as he was sitting on horseback at the gate of *Corfe Castle*, then her residence. From his untimely death, which happened in the fourth year of his reign, A.D. 979, he was surnamed the *Martyr*. He was buried at *Wareham*, and afterwards removed to *Shaftesbury*.

Among the cotemporary sovereigns of *Edward* were *Indulphus*, King of Scotland; *Congall*, King of Ireland; *John I.*, Emperor of the East; *Otho I.*, Emperor of the West; *Eric VIII.*, King of Sweden; *Harold III.*, King of Denmark; *Stephen*, King of Hungary.

ETHELRED, the son of *Edgar*, by *Alfrida*, next ascended the throne; but though his mother had incurred the guilt of murder, to procure for him the crown, he proved an ungrateful and undutiful son.

Finding the reins of government to be held by no very vigorous hands, the *Danes* renewed their depredations, and the *Welsh* shook off the yoke, and ravaged the borders of *England*. Instead of boldly meeting his enemies in the field, *Ethelred* dastardly consented to pay the *Danes* a tribute, which was called *Dane-gelt*.

Being unable to make good this engagement, his mean and cowardly mind conceived a dreadful expedient to get rid of his lordly oppressors. He ordered a general massacre of all the *Danes* in *England*, which took place A.D. 1002.

Such an expedient, however, served only to increase the evil it was intended to remove. *Sweyn*, King of Denmark, on hearing this news, vowed that he would take a bloody revenge. Accordingly, the next year, he invaded and overran *England*, causing unheeded miseries to its unhappy inhabitants.

With his usual dastardly policy, *Ethelred* attempted to purchase the forbearance of the *Danes*; but finding, at length, that this only

encouraged new inroads and devastations, he fled to *Normandy*, leaving *Sweyn* in possession of his kingdom.

Sweyn having been killed in battle, *Ethelred* returned, and remounted the throne, but the ravages of the *Danes* still continued, under *Canute*, the son of *Sweyn*, with very little opposition on the part of *Ethelred*. At length, he ended an inglorious reign of thirty-five years, A.D. 1016. He was buried at *St. Paul's*. He was succeeded by his son *EDMUND II.*

Among the king's cotemporary with *Ethelred II.* were *Sweyn* and *Canute*, kings of Denmark; *Malcolm II.*, King of Scotland; *Donald O'Neil*, IV. King of Ireland; *Hugh Capet*, King of France, &c.

EDMUND II., surnamed *Iron-side*, from his hardy valour, was the eldest son of *Ethelred II.* He fought several battles with *Canute*, who had assumed the title of "King of *England*"; and, at length, these brave monarchs, finding themselves nearly of equal strength, agreed to divide the kingdom between them.

Shortly after this amicable arrangement, the brave *Edmund* was assassinated by two of his chamberlains, instigated by *Edric*, his brother-in-law, A.D. 1017. He was buried at *Glastonbury*. From the specimen he gave of his conduct during his short reign, the nation entertained great hopes of a wise and vigorous administration.

The territory assigned to *Edmund*, comprised all the country south of the *Thames*, the city of *London*, part of *Essex*, and all *East Anglia*; whilst *Canute* possessed all the northern countries.

PERIOD VI.

FROM THE USURPATION OF THE DANES, TO THE RESTORATION OF THE SAXON DYNASTY.

CANUTE, who was now become sole monarch of *England*, was one of the most powerful sovereigns of Europe, having likewise under his dominion *Denmark*, *Norway*, and *Sweden*.

Conquerors must, of necessity, at first appear cruel, as they are obliged to repress, with a strong arm, those who are opposed to their sway; but the generous mind of *Canute* rendered him just and benevolent, as soon as his power was firmly established.

One of his first regal acts was to punish the traitor, *Edric*, and the assassins of *Edmund*. He divided all offices of trust, honour, and emolument, equally among the *English* and *Danes*, and married *Emma*, the widow of *Ethelred*.

By such measures, he quickly reconciled the minds of his new subjects to his sway. And his veneration for religion, evinced by his building many churches and monasteries, secured the good will of the clergy, the only historians of that day.

Disgusted by the adulation of his courtiers, who compared him to the *Deity*, he took an opportunity of effectually rebuking their extravagant flattery.

Walking on the beach at *Southampton*, whilst the tide was coming in, he called for a chair, and having seated himself near the water, commanded it to come no further. The waves still rolled in, and obliged this mighty sovereign to retire. *Canute*, then, turning to his courtiers, sternly rebuked their impious adulation, and from that time abstained from wearing the diadem.

In 1019, he went into *Denmark*, and defeated the *Vikings*. He died in 1036, and has left the character of a wise, just, and brave monarch, and a zealous friend of the church.

On the death of *Canute*, the *English* were desirous of restoring the Saxon line, but, after a warm dispute, the *Danes* prevailed, and *Harold*, the eldest son of the late king, succeeded to the throne.

To reinvoke the pretenders to the crown, *Godwin*, a Dane, whom *Canute* had created *Earl of Kent*, invited over from *Normandy*, *Alfred* and *Edmund*, the sons of *Ethelred II.* On their arrival, he procured the murder of *Alfred*, but *Edmund* escaped.

After an inglorious reign of three years, *Harold*, surnamed *Hare-foot*, from his extraordinary swiftness, died A.D. 1040; and was buried at *Winchester*. He was succeeded by his half-brother *HARDICANUTE*, the son of *Canute*, by *Emma*, mother of *Alfred* and *Edmund*.

To revenge the death of *Alfred*, he caused the body of *Harold* to be taken from its grave, and thrown into the *Thames*, invited his mother and *Edmund* to his court, and summoned *Earl Godwin* to surrender to the charge of the latter for the murder of his brother. The power and wealth of that nobleman, however, enabled him to evade the claims of justice, and he was acquitted. From this time

Hardicanute proved himself violent, brutal, cruel, and unjust. He burnt Worcester for having resisted the odious tax of *Danegeft*, which he had revived.

To such a pitch of gluttony, drunkenness, debauchery, and cruelty, did Hardicanute arrive, that the anniversary of his death, which took place at a banquet at Lambeth, A.D. 1041, was long celebrated by the English with sports and games, under the denomination of *Hocktide*.

Among the contemporary sovereigns of Hardicanute were *Michael V.*, Emperor of the East; *Henry III.*, Emperor of the West; *Pope Benedict IX.*; *Henry I.*, King of France; *Garcia III.*, King of Navarre; *Ferdinand I.*, King of Castile and Leon, in Spain; *Makon*, King of Sweden; *Peter I.*, King of Hungary; *Udalric*, Duke of Bohemia; *Ramires*, King of Arragon; *Casimir*, King of Poland; *Macbeth*, King of Scotland; *Briom Boromy*, King of Ireland.

PERIOD VII.

FROM THE RESTORATION OF THE SAXON LINE TO THE NORMAN CONQUEST.

On the death of *Hardicanute*, *EDWARD*, the son of *Ethelred* and *Emma*, was raised to the throne, by the influence of *Earl Godwin*, whose daughter he some time after married.

Notwithstanding this family connexion, Edward looked on Godwin with great dislike, not only as the murderer of his brother, but as possessed of too much power to be safely trusted. He therefore found a pretext for banishing the earl and his sons, and shut up his queen in a nunnery.

Towards his mother he was equally severe; for, fancying that she was more partial to her children by her second, than those of her first marriage, he deprived her of her possessions, and confined her in a convent at Winchester, where she died in 1032.

On the accession of *Edward*, the English flattered themselves that they should be delivered from the oppression of foreigners; but they soon found that they had only exchanged *Danes* for *Normans*, who crowded to the English court, and were put into the vacant bishoprics, and places of honor and profit.

In this reign the *Danes* were expelled the realm. The *Welsh*, who had invaded *England*, were defeated, and Griffith, their sovereign, was taken and beheaded. The odious tax, called *Danegeft*, was also abolished.

In 1051, *Earl Godwin* was reconciled to the King, and restored to his estates and honours; he, however, enjoyed them not long, as he died suddenly, in 1053, while at the King's table.

The death of the Earl of Godwin did not render the situation of Edward more agreeable, as his son *Harold* inherited his father's ambition, and publicly aspired to the succession: to thwart his views, the King sent for *Edward*, the son of *Edmund Ironside*, from Hungary, but he died soon after his arrival, leaving a son named *Edgar Atheling*, and two daughters.

WILLIAM, *Duke of Normandy*, having visited his kinsman *Edward*, that prince is said to have promised the succession to him. Soon after *Harold* was sent by the King to the court of Normandy, when *William* compelled him to swear the most solemn oath, that he would promote his pretensions to the crown of England.

In 1065, Edward commenced the erection of Westminster Abbey, and formed a code of laws, denominated from him, "*The Laws of Edward the Confessor*," from which is supposed to have originated our "Common Law."

- Religion, bigotry, and superstition, tarnished the virtues of *Edmund's* mind, and rendered him cruel and unjust, particularly to his queen. His mistaken zeal and piety were, however, highly lauded by the clergy; and he received the already mentioned title of "*Edward the Confessor*". He died in 1066, and was buried in Westminster Abbey.

Notwithstanding the solemn oath by which he had bound himself to promote the succession of *William*, *HAROLD* immediately seized the reins of government, and was proclaimed king.

William, however, was not idle; he sent an embassy to demand the crown, to which *Harold* replied, that he would resign it only with his life.

William lost no time in assembling an army of sixty thousand men, which he embarked on board a fleet of three thousand vessels. With this force he landed at *Pevency*, in *Sussex*.

Unhappily for *Harold*, a short time before this event, his king-

dom had been invaded by his brother *Roston*, assisted by *Harfuges*, king of Norway. The king boldly attacked, and completely defeated them, both the chiefs being killed in battle. But this victory thinned his ranks, and his march back to the south harassed his troops, and rendered them less able to encounter this new foe.

In spite, however, of these disadvantages, he, boldly attacked the army of *William*, on a plain, now called *Battle*, in *Sussex*: for a long time the contest was doubtful, until *Harold* having been shot with an arrow in the forehead, which caused his instant death, victory declared for the *NORMANS*. This great event happened October 14, 1066.

This was an end put to the Anglo-Saxon monarchy, after it had subsisted from *Hengist* the First, king of Kent, about 600 years.

The contemporary sovereigns of *Harold* were *Melislaus III.*, King of Scotland; *Melach III.*, King of Ireland; *Philip I.*, King of France; *Sancho IV.*, King of Navarre; *Sancho II.*, King of Castile and Leon; *Sancho*, King of Arragon; *Pope Alexander*; *Constantine IX.*, Emperor of the East; *Henry IV.*, Emperor of the West; *Salomon*, King of Hungary; *Boleslaus*, King of Poland; *Sweyn II.*, King of Denmark; *Halsten*, King of Sweden.

CONVERSATION UPON THE PRECEDING CHAPTERS.

Q. Who were the *BRITONS*?

A. The first inhabitants of England, the same people as the *Cymri*, now called *Welsh*. They are supposed, to have descended from *Gomer*, the common ancestor of all *Celtic* tribes.

Q. Who were the *ROMANS*?

A. The Romans were a renowned people of Italy, who, at the time of their glory, were the conquerors of all the then known world. The Romans possessed Britain till A.D. 488.

Q. Who were the *SAXONS*?

A. The Saxons were a tribe of those Scandinavians who, in the decline of the Roman Empire, settled in the north of Germany and Denmark, under several denominations, viz. *Saxons*, *Angels*, *Jutes*, or *Danes*. They first landed in Britain A.D. 450, and established the kingdom of Kent, the first of the *Heptarchy*, A.D. 457.

Q. What was the *HEPTARCHY*?

A. The *Heptarchy* was the division of the land into seven kingdoms, established by the Saxons, as follow: Kent, Sussex, Wessex, East Anglia, Mercia, Essex, and Northumberland. The first of these began A.D. 457, as before observed, and the whole became united under one prince, A.D. 827.

Q. Who were the Saxon kings that governed England after the fall of the *Heptarchy*? and how long did they enjoy the English throne?

A. The names of the Saxon kings were *Egbert*, *Ethelwolf*, *Ethelbald*, *Ethelbert*, *Ethelred I.*, *Alfred the Great*, *Edward the Elder*, *Athelstan*, *Edmund I.*, *Edred*, *Edwy*, *Edgar*, *Edward the Martyr*, *Ethelred II.*, and *Edmund II.*, surnamed *Ironside*; making fifteen in number, whose united reigns make a period of 188 years, at the expiration of which this country was subdued by the *Danes*, who kept possession of the English thrones from A.D. 1017 to 1041, when the Saxon kings were restored, making a period of 24 years.

Q. How many Danish Kings reigned in England?

A. Three; viz., *Canutus the Great*, *Harold I.*, and *Hardicanute*.

Q. Who were the Saxon kings that reigned in England after the expulsion of the *Danes*, and by whom were they succeeded?

A. The Saxon princes who reigned after the restoration were two, viz. *Edward*, surnamed the Confessor, and *Harold II.*, after whom the crown fell into the possession of *WILLIAM THE CONQUEROR*, A.D. 1066.

PERIOD VIII.

FROM THE NORMAN CONQUEST TO THE CONTEST BETWEEN THE HOUSES OF YORK AND LANCASTER.

WILLIAM THE CONQUEROR.

Immediately after the battle of *Hastings*, *WILLIAM* marched towards *London*, where he was met by the magistrates and bishops who offered him the keys of the city, and the crown.

For a time, *William* ruled with great lenity, but hearing that the *Northumbrians* had raised up in rebellion at *York*, he marched thither, and destroyed them in a general massacre.

From this time, *William* ruled the English with a rod of iron; he deprived the nobles of their estates, and bestowed them upon his *Norman followers*. He plundered the clergy, and imposed on them military service; and he destroyed numerous towns and villages in Hampshire, for the purpose of forming the *New Forest*; that he might indulge his favourite pastime of hunting.

In 1068 he revived the odious tax called *Danegeelt*. He also built strong castles in various parts of the country to keep his new subjects in awe, and forbade any Englishman to keep fire and candle burning after the ringing of a bell, called the *Curfew Bell*, from the French words, *courré feu*, or cover fire.



In 1078 William commenced the *Tower of London*, and built Newcastle. He introduced likewise the Norman laws and language, and ordered *Doomsday-book* to be compiled, which contained an exact account of every man's estate.

In this reign, *Malcolm*, king of Scotland, invaded England, but was defeated by William, and obliged to do homage for his crown. The *Welsh*, likewise, were defeated in several battles, and obliged to pay tribute.

William met with his death in a war with France, near the city of Nantes, by a fall from his horse, in 1087. He reigned 21 years, and was buried at *Cuen*, in Normandy; he was succeeded by his son *William*.

This prince appears to have been cruel, rapacious, and revengeful. In person he was tall and portly, and so strong, that no one but himself could bend his bow.

Among the cotemporary sovereigns of William were *Malcolm III.*, King of Scotland; *Melachi III.*, King of Ireland; *Pope Gregory VII.*; *Constantine X.*, Emperor of the East; *Henry IV.*, Emperor of the West; *Philip I.*, King of France; *Sancho V.*, King of Navarre; *Afonso VI.*, King of Castile and Leon; *Uratistar*, King of Bohemia; *Solomon*, King of Hungary; *Canute IV.*, King of Denmark; *Philip*, King of Sweden.

WILLIAM II.

As in this age, power, in many cases prevailed against right, *William*, the second son of the deceased king mounted the throne, to the exclusion of *Robert*, the eldest, who was absent in France. William was surnamed *Rufus*, from his red hair.

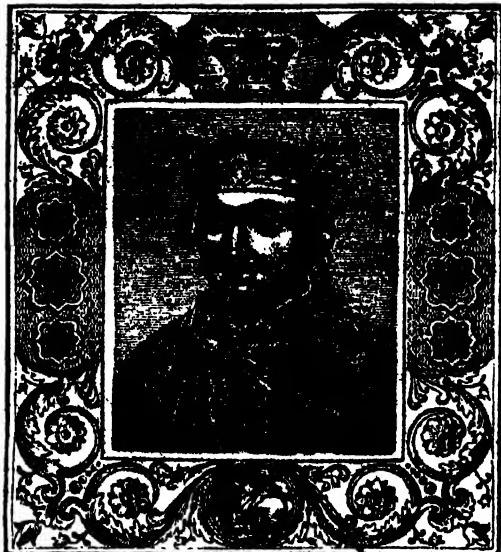
William was remarkable for a rash and ferocious bravery, but he was rude and brutish in his manners, irreligious, and without honour or honesty. Greedy of money only to waste it in lavish profusion.

It is probable, that his having seized the possessions of the church, occasioned his character to be more severely depicted, than it otherwise would have been by the *Clergy*, the only historians of that day.

Having rendered himself odious by his tyrannical actions, a conspiracy was formed for deposing him, and placing *Robert*, Duke of Normandy) on the throne. But this prince, who was an indolent disposition, neglected to send succours to the conspirators, William defeated their measures, and took a severe revenge.

Not content with having deprived his brother of the kingdom of England, he now attempted to wrest Normandy also from him. Though at first successful in this war, he was finally prevented

from accomplishing his wicked purpose by the vigorous opposition of prince *Henry*, his younger brother.



William likewise carried on a war with *Malcolm*, king of Scotland with various success, but at length he compelled that monarch to do him homage. Some time after the Scots renewed the war, when Malcolm was slain by a mean stratagem of the Earl of Northumberland, who pretending to deliver to him the keys of Alnwick Castle on the point of a spear, pierced him with it in the eye. From this circumstance, he acquired the name of *Piercye* or *Percy*.

The *Crusade*,* or war against the *Saracens* for the recovery of *Judea*, having been set on foot about this time, *Robert* mortgaged his Duchy of Normandy to William for ten thousand marks, to enable himself to go on that romantic enterprise.

In 1098 William commenced the rebuilding of London bridge, a wall round the Tower, and Westminster Hall; for the completion of these undertakings he oppressively exacted great sums from his subjects.

At length, the career of this tyrant drew to a close; for, hunting one day in the New Forest, he was shot in the breast by an arrow, discharged by Sir Walter Tyrel. This event has been generally ascribed to accident, but there is great reason to suppose that it was by design, to rid the world of such an oppressor.

The body was taken in a common cart to Winchester, where it was interred with little ceremony, A.D. 1100.

HENRY I.

ROBERT, the rightful heir being in Palestine at the time of this event, his brother *HENRY* seized the royal treasures at Winchester, and caused himself to be proclaimed king.) As he was skilled in the learning of the times, he was surnamed *Beauclerc*.

It is common with usurpers to attempt to render themselves popular, by reforming abuses, redressing grievances, and rendering

* The history of the *Crusade*, or holy war, is briefly this: *Muhomet* had, by means of his pretended revelations, instituted a new religion; he put himself at the head of the Arabians, and took Jerusalem. The Christians had the mortification to see the holy sepulchre, and the other places made famous by the death of our Saviour, fall into the hands of the infidels. *PETER*, commonly called the *Hermit*, had made the pilgrimage to *Jerusalem*, and being deeply affected with the danger to which the act of piety now exposed the pilgrims, formed the bold project of leading armies into Asia, sufficient to subdue this powerful people, which now held the *Holy Land* in subjection. He proposed his views to the *Pope*, and to all the sovereigns of Christendom, who all united in this undertaking; men of all ranks flew to arms with the utmost ardour; the sign of the Cross became the badge of union, and was affixed to their right shoulder, by all who enlisted themselves in what they termed the *sacred war*.

themselves agreeable to the people. *Henry* adopted this method of proceeding and thereby strengthened his authority.



To render himself more secure, he married *Matilda*, daughter of *Malcolm* (king of Scotland), by *Margaret*, the sister of *Edgar Atheling*; thus uniting the royal family of the *Saxon* with that of the *Norman-line*.

In order to win the affections of his people, *Henry* confirmed the ancient Saxon laws, abolished the *Curfew Bell*, established a standard for weights and measures, and enacted many other salutary regulations.)

Robert returning from the Holy Land, made a descent upon England, renewed his claim to the crown, but *Henry* compromised the matter, by giving up to him the towns of Normandy that were garrisoned by the English, and paying him an annual pension of three thousand marks.

Notwithstanding this reconciliation, the king of England invaded Normandy, defeated the forces opposed to him, and took his brother prisoner. Shortly after, he had him confined in the castle of Cardiff, where he languished twenty-six years. Thus Normandy again became united to the English crown. The effigy and tomb of *Robert* are still to be seen in Gloucester cathedral.

In 1115, *Henry* assembled the states of his kingdom, at Salisbury. This is said to have been the first parliament.

William, the eldest son of *Henry*, having married the daughter of the Earl of Anjou, was lost as he was returning to England with his bride, by his ship striking against a rock. This calamity so affected the king, that he was never seen to laugh after.

Having no other son, he bequeathed his crown to his daughter *Matilda*, who married, first, *Henry*, emperor of Germany, and next, *Geoffrey Plantagenet*, earl of Anjou, from whom descended the king of the "House of Plantagenet". *Henry* died in Normandy, A. D. 1135, aged 66, and left the character of a brave, learned, and accomplished, but cruel, and avaricious monarch. He was interred in the Abbey of Reading.

STEPHEN.

(HOUSE OF BLOIS).

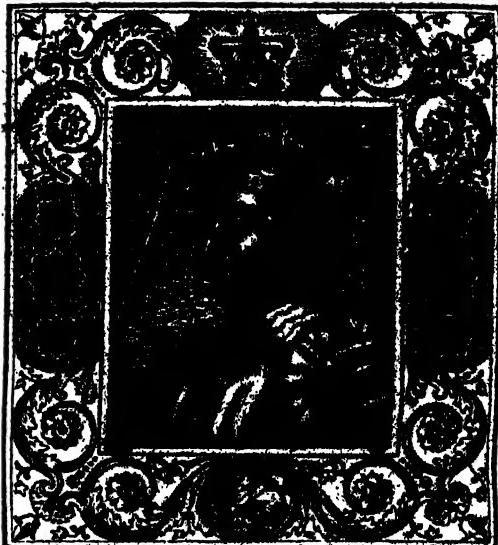
Henry was no sooner dead, than *Stephen*, count of Blois, his sister's* son, usurped the crown, to the prejudice of the empress *Matilda*, to whom the nobles and clergy had sworn fealty during her father's life.

For the reasons already assigned, *Stephen* commenced his reign with many popular acts, and permitted no less than 1500 castles to be erected by the nobility, which afterwards occasioned him, and his successors, infinite trouble.

Finding his error when almost too late, and that the *Barons*

* *Adele*, the seventh child of *William the Conqueror*,

were now become too powerful to be easily controlled by the crown, he took vigorous measures to reduce them to obedience, and partially succeeded, but the enemies he thus created, invited *Matilda*, (daughter of the late king), to come over and take the possession of the throne.



For some time a bloody civil war raged between these rivals, until at length, *Stephen* was taken prisoner, and *MATILDA* was universally acknowledged *Queen of England*. But her haughtiness and pride having alienated the hearts of her subjects, she was driven from the kingdom, and *STEPHEN* reinstated on the throne.

He was not, however, destined to enjoy his dignity in peace. No sooner was *Henry*, the son of *Matilda*, of sufficient age to command an army, than he landed in England, in 1152, with a formidable army; but to avoid bloodshed, both parties being about equal in strength, it was agreed, that *Stephen* should enjoy the crown during life, and that *Henry* should be acknowledged his successor.

Stephen survived this treaty not quite a year, and died on the 25th of October, 1154, in the 20th year of his reign. He was buried at *Feversham*.

Had *Stephen* being legally entitled to the crown, he would, there's little doubt, have been a good and merciful monarch; but circumstances obliged him to commit acts of tyranny and imprudence, which his better judgment condemned.

HENRY II.

(OF THE HOUSE OF PLANTAGENET).

HENRY the Second, king of England, of the house of Plantagenet, was crowned at Westminster, December 19, 1154. His first care was to dismantle the numerous castles which the nobility and clergy had erected in the reign of *Stephen*, and to send away the foreign troops which that monarch kept in his pay. With great judgment and firmness, likewise, he took many other salutary measures for the good of his kingdom, and his own security. But the tranquillity of his reign was sadly disturbed, from a quarter where he least expected it. *Thomas à Becket*, whom the king had raised from a low station, to be archbishop of Canterbury, took part with the clergy against his benefactor.

After a violent contest, in which *Henry* strove to lessen the power and arrogance of the ecclesiastics, and *Becket* to support them, and several breaches and apparent conciliations had taken place, some over-zealous friends of *Henry* assassinated the archbishop in his own cathedral, Dec. 29, 1170.

Although there is no reason to suppose that *Henry* commanded the murder of *Becket*, he was obliged, in order to satisfy the superstition of his people, who regarded the archbishop as a martyr, to do penance, by walking barefoot, three miles, to his tomb, and submitting to be scourged by the monks.

In 1167, *Henry* undertook and accomplished the conquest of *Ireland*; in 1171, he divided England into circuits, and appointed judges of assize; in 1176, he caused London-bridge to be built of stone, the former structure being wood. And the *Scotch* and *Welsh* were chastised for their repeated incursions, and their princes were compelled to do homage to *Henry* for their crowns.



During the latter part of his reign, *Henry* experienced much quietude from the frequent rebellion of his sons, *Richard* and *John*, which were instigated by their mother. This undutiful conduct of his children so preyed upon his mind, that it shortened his days, so that grief put an end to his life, July 6, 1189, at the age of fifty-seven.

Fair *Rosamond*, daughter of Lord *Clifford*, had a great ascendancy over *Henry*. He kept her concealed at Woodstock; but, being at length discovered by the Queen, she fell a sacrifice to her jealousy and revenge.

This prince has been greatly admired as an able legislator, and a brave general: his encouragement of trade and manufactures was the foundation of the wealth since enjoyed by the English nation.

London-bridge, which was begun in his reign, was thirty-five years in building. About the same time glass windows were first introduced into England.

Among the cotemporary sovereigns of *Henry* were *Alexis II.*, Emperor of the East; *Pope Gregory VIII.*; *Louis VII.*, King of France; *Sancho VI.*, King of Navarre; *Alfonso II.*, King of Arragon; *Alfonso VIII.*, King of Castile and Leon; *William I.*, King of Naples; *Frederick I.*, King of Bohemia, and Emperor of the West; *Alfonso I.*, King of Portugal; *Stephen III.*, King of Hungary; *Casimir II.*, King of Poland; *Canute V.*, King of Denmark; *Charles VII.*, King of Sweden; *Malcolm IV.*, King of Scotland; *Hiderick*, King of Ireland, conquered by *Henry II.*, King of England, and the country annexed to the British crown, A. D. 1171.

RICHARD I.

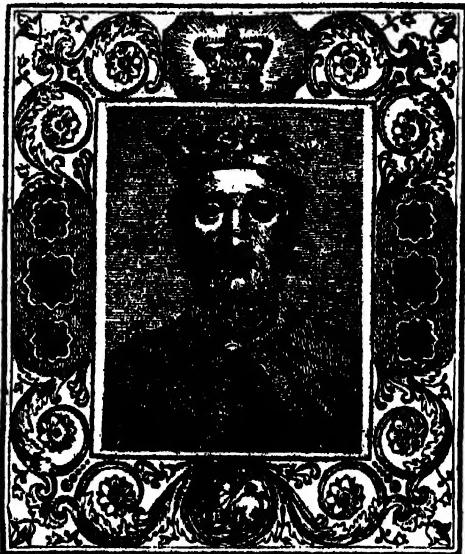
The first act of *Richard*, on coming to the crown, was to release his mother from her sixteen years confinement. At his coronation, the licentious rabble committed a terrible massacre of the *Jews*.

The *Crusade* against the Infidels in Palestine, being at that time zealously encouraged by the clergy, *Richard* endeavoured, by every means, just and unjust, to raise money sufficient to fit out a large fleet and army for that expedition, in concert with *Philip of France*.

In *Palestine*, *Richard* gained great renown for his valour, and was denominated *Cœur-de-Lion*, or *Lion-hearted*. But his affairs were very ill administered at home by those to whom he intrusted the government; and his brother *John* attempted to mount the throne.

Notwithstanding *Richard*'s success in the Holy Land, he soon found his army and his treasures moulder away; and having also

been deserted by the King of France, he made a truce with *Saladin*, and set out for *England*. Disguised as a pilgrim, he attempted to pass through Germany, but was recognised by the Duke of Austria, who delivered him as a prisoner to his enemy, *Henry VI.*, Emperor of the West.



The place of *Richard*'s confinement was kept a profound secret, until it was accidentally discovered by a wandering minstrel, who played a tune under the windows of the fortress, which *Richard* repeated on his own harp from within. No sooner did his mother learn the particulars of his imprisonment, than she hastened to get him released, by paying a ransom of 100,000 marks, and giving security for 50,000 more.

On his return to *England*, he at first determined to make war on *France*, and to punish his traitorous brother; but, at length, he concluded a truce with the former, and generously pardoned the latter. On the expiration of the truce, the war with *France* was renewed, but *Richard* received his death-wound in a private dispute with one of his own subjects. He died April 6, 1199, in the tenth year of his reign, and forty-third of his age.

Richard was open, generous, and brave, but little disposed to encourage the arts of peace. In his reign, however, *London* began to be substantially built with brick, stone, and tile, or slate; and its commercial inhabitants to be classed in corporations, or companies, with a mayor at their head. *Henry Fitz-Alwyn* was the first chief magistrate. In this reign an ox sold for three shillings, and a sheep for fourpence. But it is to be observed that the price of labour was no more than twopence per day, which sum at this time is supposed to have been equal to about two shillings and sixpence. In this reign, also, *Robin Hood*, and his associate, *Little John*, leaders of a band of robbers, committed their depredations.

JOHN.

On the decease of *Richard*, who died without issue, he was succeeded by his brother *JOHN*; but the rightful heir to the crown was Prince *Arthur*, the eldest son of *Geoffrey*, *John*'s elder brother; to avoid, however, his claim, he put this unhappy Prince to death; and it is generally believed that he did it with his own hands. And from this crime may be dated all his misfortunes.

Choler and hasty, *John* embroiled himself with his nobles and clergy, but he had not firmness to persist in vigorous measures to repress their power, his violence, therefore, was merely a prelude to abject concessions, extorted from him by fear, and violated as soon as an opportunity offered.

(To be continued.)

THE GUIDE TO KNOWLEDGE.

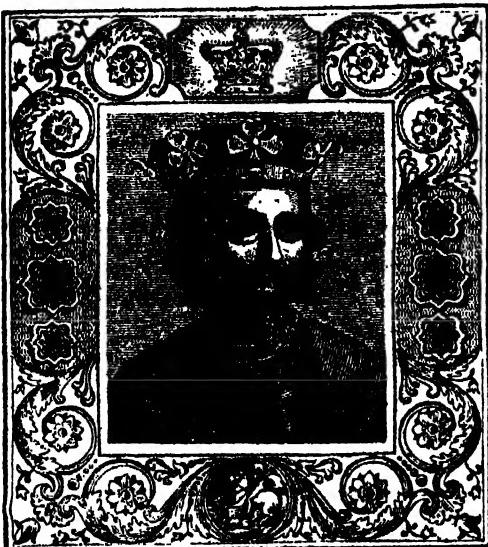
EDITED BY MR. W. PINNOCK,

AUTHOR OF "PINNOCK'S CATECHISM," "GRAMMAR OF GEOGRAPHY AND HISTORY," ETC., ETC.

No. VII.]

SATURDAY, AUGUST 11, 1832.

PRICE
ONE PENNY.



JOHN—(CONTINUED FROM NO. VI., PAGE 48.)

In the reign of this pusillanimous monarch, the French recovered Normandy, and all the other English provinces in France, except Guienne. He went over, however, in person to *Ireland*, put an end to the commotion there, and reduced the whole island to obedience.

The tyrannical and imprudent conduct of *John*, at length induced his barons to form a confederacy against him, who insisted on the restoration of the laws of *Edward the Confessor*. On hearing this demand, *John* flew into a violent rage, and swore he would not comply; but, finding the nobles in great force, he consented, and signed a DEED, called MAGNA CHARTA, A. D. 1215, which laid the foundation of the liberties of England. The scene of this important event was *Runnymede*, between Egham and Windsor, a spot ever since deservedly celebrated, and even hallowed, by every zealous lover of liberty.

The BARONS had no sooner retired to their castles, than *John* revoked his grants. He also attempted to raise forces, and to gain the assistance of the *Pope*. That pontiff espoused his cause, annulled his oath, and excommunicated the barons; those brave men were not, however, to be deterred from their duty by such measures, they therefore invited over *Louis*, son of the King of France, to be their monarch.

Louis landed with his army at *Sandwich*, on the 23d of May, 1216, passed through *Rochester*, and entered London in triumph, the citizens doing homage to him as their proper sovereign; but by his measures he soon alienated the hearts of his new subjects, and was very soon obliged to quit the country.

The ill success of *Louis*, however, did not greatly advantage the affairs of *John*, for, in consequence of being in a state of constant alarm and uneasiness, he died of grief at *Newark*, Oct. 18, 1216, and was buried at *Worcester*.

The character of *John* is made up of mean and odious vices, with scarcely one redeeming quality. Yet his misrule served to call forth the energies of his people, who found means, by their exertions, to lay the foundation of future liberty.

* * * The Publisher deems it necessary to state the work has hitherto been printed on an inferior paper to that ordered from the Stationer;—it will in future be avoided.

Among the cotemporary sovereigns of *John* were *Peter*, Emperor of the East; *Philip*, Emperor of the West; *Pope Innocent III.*; *Philip II.*, King of France; *Sancho II.*, King of Navarre; *James I.*, King of Aragon; *Alfonso IX.*, King of Castile; *Ferdinand IV.*, Regent of Leon; *Alfonso II.*, King of Portugal; *Frederick I.*, King of Naples; *Ottocar I.*, King of Bohemia.



HENRY III.

On the death of *John*, his son HENRY was only ten years old, the Earl of Pembroke therefore was appointed guardian to the king, and regent of the kingdom.

Louis of France still lingered in England, in the hope of retrieving his affairs. Having procured a large reinforcement from his own country, a great battle was fought May 19, 1217, in which the French army was completely routed, and *Louis* obliged to fly the kingdom.

The Earl of Pembroke governed with great wisdom and equity, and, had he lived, it is probable that *Henry* would have been educated in the principles of virtue and honour. To the great grief of the nation Pembroke died in 1219.

In 1226, *Henry* was declared of age, though under twenty-one, but was soon found to be deficient in that vigour of mind necessary to govern the haughty barons and turbulent people of his realm. He likewise exhibited much of that tyranny, deceit, and unfaithfulness to his word, which had so disgraced his father.

Iritated by the weak conduct of the monarch, who suffered himself to be wholly governed by the clergy and foreigners, the barons formed a confederacy in 1258, and made *Simon Montford*, Earl of Leicester, the king's brother-in-law, their general. For some time *Henry* submitted to the restraints imposed upon him by his confederated barons, and swore to observe some articles which they drew up for the better government of the kingdom; but in 1264 he ventured a battle with the insurgents at *Leviers*, in Sussex, in which he was defeated, and himself and his son, *Prince Edward*, taken prisoners.

Edward having found means to escape from confinement, raised an army, and in 1265 routed the rebel army, killed *Montford*, and restored his father to the throne. *Henry* confiscated the estates of the confederated barons. He then wreaked his vengeance on the citizens of *London*, by abridging their charters.

In this reign two knights for each county, and one or two burgesses from each borough, were elected and sent to parliament, and thus formed what is now called "*The House of Commons*."

Prince *Edward* having by his wise and prudent conduct settled the affairs of the kingdom, so as to restore tranquillity, set out for the *Holy Land*, where he performed the most signal acts of bravery. Finding, however, the passion for *crusades* very much abated, and that he received but little assistance from other powers, he soon embarked for England; but before he reached his native shores *Henry* had expired, A.D. 1272, after a reign of 56 years, the longest in our annals, except that of *George III.* He was interred in *Westminster Abbey*.

He was more to be praised for his private than his public virtues. His political imperfections, however, should be sacred from censure, as they were not the effects of depravity, and were the happy cause of the greatest liberties the people now possess, from the establishment of their parliamentary authority.



EDWARD I.

EDWARD, at the time of his father's death, was on his way from *Palestine*, where he had acquired the character of a great general, in the wars waged by the Christian princes against the Saracens, for the recovery of the *Holy City*, *Jerusalem*. He was crowned on the 19th of August, 1274, at which ceremony 500 horses were let loose to be caught by the populace for their own use.

The conduct of *Edward* towards his father, and his valour and renown in the *Holy Land*, led his subjects to expect a wise and vigorous administration, and they were not disappointed.

The Welsh, though repeatedly subjugated by the *English*, bore the yoke with much impatience: *Llewellyn*, their prince, attempted to strike it off, but *Edward* marched with a large army against him and he was slain in the conflict.

Aware of the strength of popular prejudices, *Edward* endeavoured to reconcile the *Welsh* to his government, by giving them a native prince. On the approaching confinement of his queen, therefore, he sent her to *Carnarvon*, where she gave birth to a son, whom he created "*Prince of Wales*". From that time the eldest son of the King of England has borne that title.

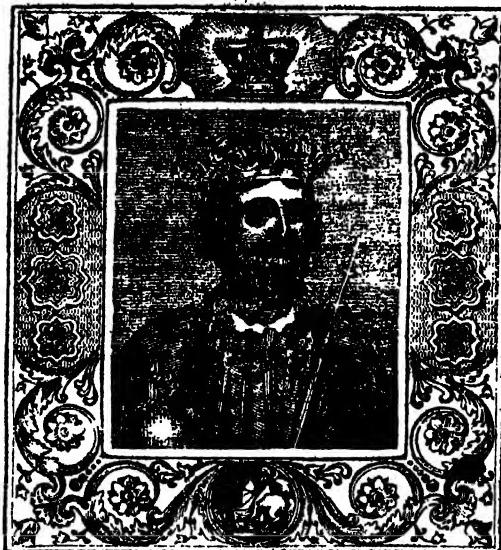
On the death of *Alexander III.* of Scotland, without a lineal heir, two competitors arose for the crown, *John Balliol* and *Robert Bruce*, who agreed to refer the decision of their claim to *Edward*, as umpire. *Edward*, who was ambitious, thought this a favourable opportunity for acquiring the sovereignty of *Scotland*. He therefore decided in favour of *Balliol*, on that prince promising to pay him homage for his kingdom. *Edward*, however, exercised his supremacy with such caprice and tyranny, that *Balliol* revolted; but his resistance was unavailing. He was compelled to submit, and was sent prisoner to the tower.

But the imprisonment of their king did not ensure the submission of the *Scots*; a patriot named *Sir William Wallace*, for a long time successfully opposed the armies of *Edward*, and though, in 1305, he was basely betrayed into the hands of the English king, and put to death, a new opponent started up in the person of *Robert Bruce*, who defeated the *Earl of Pembroke*, and took him prisoner.

Irritated at the determined resistance of the *Scots*, *Edward* assembled an army, sufficiently powerful in his estimation, to subjugate the whole nation; but on his march he was seized with a disorder at *Carlisle*, and died at *Bury*, upon the sands, July 7, 1307, aged 68.

Edward was a prince greatly distinguished for his majestic appearance; he was tall, robust, and well proportioned, except that his legs were rather too long. He was brave, but cool, penetrating, and sagacious; and from his having passed many excellent statutes, and new modelled the administration of justice, he has been called the *English Justinian*. Indeed, his high sense of justice was such, that he imprisoned his own son for an outrage committed against the *Bishop of Leicester*. His life is also distinguished for the exemplary affection for *Eleanor*, his royal consort, who saved his life by sucking the poison of a wound given him by a cruel and despatch assassin.

Among the contemporary sovereigns of *Edward I.* were *Michael VIII.*, Emperor of the East; *Alfonso II.*, Emperor of the West; *Philip IV.*, King of France; *Henry I.* and *Jane*, King and Queen of Navarre; the latter, (*Jane*) by marrying *Philip IV.* of France, united the two crowns; *James II.*, King of Aragon; *Ferdinand IV.*, King of Castile and Leon; *Robert Bruce*, King of Scotland; *Alfonso III.*, King of Portugal; *Charles II.*, King of Naples; *Henry II.*, King of Bohemia; *Oto*, King of Hungary; *Leszek*, King of Poland; *Daniel*, Czar of Russia; *Eric VIII.*, King of Denmark; *Magnus II.*, King of Sweden.



EDWARD II.

EDWARD II. was the son of the preceding monarch, but inherited few, or none of his father's good qualities. During the life of the latter, he had associated with dissolute companions, one of whom, named *Gaveston*, the king had banished the realm.

Regardless of his father's dying admonitions, *Edward* suffered the war with *Scotland* to languish, recalled *Gaveston* from exile, and loaded him with riches and honours. The insolence and tyranny of this minion, roused the indignation of the nobles, who made war upon their sovereign, and put *Gaveston* to death.

The imbecility of *Edward*, and the troubles of his reign, encouraged the *Scots* to attempt driving the *English* out of their country; they soon recovered their garrison towns, and completely gained their independence, by defeating the *English* monarch, with a very inferior force at *Bannockburn*, near *Stirling*.

After the death of *Gaveston*, the king chose for his favourite,

Spencer, a young gentleman of good family, but he shared no better fate than his predecessor; being first banished by the *Barons*, and, on his recall, hanged, with his father, by order of the queen, who had usurped the royal authority. Edward, to avoid personal violence, embarked for Ireland, but was driven by contrary winds back, on the coast of Wales, where he fell into the hands of his enemies, who imprisoned him in Monmouth Castle.

There is but a short space between the prison and the grave of princes. Edward was at length deposed and confined in Berkeley Castle, and after suffering every indignity, was put to a most cruel death, September 22, 1327, in the 43rd year of his age. He was buried in Gloucester cathedral.

Edward, in person, greatly resembled his father, being tall and handsome; but he inherited only the defects of his mind, being cruel and illiberal, and without valour and capacity. It was to his blind partiality for favourites, and his queen's infidelity, which had formed an improper connection with Mortimer, however, that his tragical end may be principally attributed. He was succeeded by his son *Edward*.



EDWARD III.

EDWARD III. being only fourteen years of age, the administration of his government was conducted by the queen and Mortimer, to the great dissatisfaction of the nation. *Bruce*, King of Scotland, likewise, took advantage of Edward's minority, to ravage the northern counties of England. The King of France dying in 1328, without issue (male), Edward claimed the crown, in right of his mother, the sister of that monarch. As he was not, however, in a situation at that time to enforce his claim, *Philip de Valois*, mounted the throne.

The conduct of the queen, and Mortimer, was now so notoriously improper, that Edward, in 1330, determined to take the reins of government into his own hands. His first act was to seize his mother's dowry, and confine her in the castle of Rising, and to hang Mortimer at Tyburn.

Edward, who had married Philippa, of Hainault, had a son in 1330, who was afterwards the renowned "Black Prince". He now determined to chastise the Scots for their late ravages, and having marched a large army into that country, defeated them at *Hallidon Hill*, A. D. 1333. *David*, their king, fled into France, and Edward placed *Baliol*, the son of John *Baliol*, on the throne.

In 1337, Edward created his son *Duke of Cornwall*, which title has been borne by the heir apparent ever since. He now determined to attempt the conquest of France, and assumed the title of king of that country.

Soon after he obtained a victory over the French at sea; his own fleet consisted of 300 sail, which he commanded in person, and that of his adversaries of 400.

In 1346, Edward, accompanied by the Prince of Wales, ravaged

Normandy, but was met, near *Cressy*, by the King of France, with a superior force. The battle, however, ended in favour of the English, 30,000 of the French were slain in the engagement.

In this memorable contest, the King of Bohemia, who was in the French army, was slain. His crest of three Ostrich plumes, with this motto "*Ich Dien*," (I serve,) was found on the field, and brought to the Prince of Wales, who adopted it as his own. Cannon were first used at the battle of *Cressy*.

The *Scots*, encouraged by the absence of Edward, drove *Baliol* from the throne, and reinstated *David*; they then invaded England with a numerous army, but were met at *Neville's Cross*, near *Durham*, by Lord *Percy*, completely defeated, and their king taken prisoner, October 17, 1346.

Whilst these events were occurring in Britain, Edward was carrying on the siege of *Calais*, which made a vigorous defence; at length the town was compelled, by famine, to surrender, when Edward agreed to save it from destruction, only on condition, that six of the chief citizens should voluntarily offer to die for the salvation of the rest.

Six such noble patriots were found, and Edward was about to disgrace himself for ever, by sending them to execution, when happily Queen *Philippa* arrived from England, and, on hearing the circumstances, interceded for, and obtained their pardon.

Soon after Edward's return from *Calais*, he instituted the celebrated "*Order of the Garter*," to which crowned heads have thought it an honour to belong.

On the 10th of September, 1356, his son *Edward*, surnamed the *Black Prince*, fought the famous battle of *Poictiers*, in which the French were again completely defeated; the French king, his son *Philip*, and many of his chief nobility taken prisoners and sent to England. In October, the same year, *David*, of Scotland, was restored to his kingdom, on paying a ransom of 100,000 mark.

To the great grief of the nation, Prince *Edward* died of a consumption, on the 8th of June 1376, in the 46th year of his age; and was buried at *Canterbury*. About a year afterwards, the king also ceased his mortal career, on the 21st of June, 1377. He was buried in *Westminster Abbey*.

The first step towards a reformation in the church, was taken in this and the succeeding reigns, by John *Wickliffe* and his followers, known by the name of *Lollards*.

The manufacture of woollen cloths was introduced into England in this reign, in the year 1331, by John *Kemp*, a native of Flanders.

Edward III. was tall, majestic, and finely formed, courteous and affable; brave and well skilled in the feats of arms. He was a consummate general; but so greedy of glory and renown, that he sacrificed the lives of thousands of human beings, and oppressed his people with a load of taxes, for no adequate advantage.



RICHARD II.

RICHARD II., son of the Black Prince, succeeded his grand-

father, *Edward III.*, A. D. 1377. As he was only eleven years of age, he was placed under the guardianship of his uncles, Duke of Lancaster and Earl Pembroke.

England being at this time harassed by the incursions of the *Scots*, and involved in wars with the *Spaniards*, *Flemings*, and *French*, the people were greatly oppressed by taxes, the most grievous of which was a *poll-tax*, because it bore unequally, the rich paying no more than the poor.

While the nation was in a ferment from these exactions, a circumstance occurred which blew their discontents into a flame. One of the tax-gatherers having insulted the daughter of a blacksmith, named *Wat Tyler*, the enraged father immediately struck him dead with his hammer.

Aware that his life was forfeited by this violence, he excited his countrymen to resistance, and putting himself at the head of the insurgents, he soon collected a formidable force.

In a few days, this rebellious army amounted to 100,000 men, commanded by resolute leaders of their own class. As usual, in all acts of rebellion, they committed the most outrageous acts of violence, and cut off the heads of the Archbishop of Canterbury, and many nobles, and of other persons of distinction. On a general pardon being proclaimed, however, great numbers departed to their homes.

WAT TYLER was still at the head of 30,000 or 40,000 men, assembled in Smithfield, whether the king had invited him to a conference. But his demands were so extravagant, and his behaviour was so insolent, that Sir *William Walworth*, the lord mayor, struck him from his horse with his mace, and his attendants dispatched him with their daggers.

On this, the rebels prepared to take vengeance for the death of their leader, and the king's life would, probably, have been sacrificed, had he not boldly rode up to them, and promised to comply with their desire. The next day he granted them a pardon, and a charter of freedom, and they quietly dispersed to their homes. But nothing was further from the king's mind than to fulfil his promise. No sooner was the danger past, than he retracted his grants, and executed six of the ringleaders as traitors.

Being now sixteen years of age, *Richard* assumed the government, and by the chastisement he inflicted upon the *Scots*, for their attempt in *Wales*, and the defeat of the French force sent to invade England, great hopes were entertained of a vigorous and glorious reign. But a bright and sunny morning is often succeeded by a dark and stormy day. Thus it was with Richard's government. After his marriage with *Ann of Luxembourg*, he began to display a taste for luxury and magnificence, which was maintained by an extravagance of expenditure, which naturally led to acts of tyranny and oppression.

One of these, which finally led to his dethronement and death, was, his banishing the Dukes of *Hereford* and *Norfolk*, without allowing them an opportunity of justifying their conduct. On the death of *John of Gaunt*, father of the Duke of *Hereford*, he likewise seized the estates to which that nobleman was heir.

Like other weak princes, Richard had his favourites, who maintained an absolute ascendancy over him. By the interference of Parliament, however, they were banished, but his subsequent measures seemed in no wise improved. In 1397, he put his uncle, the Duke of Gloucester, to death, for honestly reproving his malpractices.

Richard's general conduct had now caused such discontent amongst his people, that the Duke of Lancaster (late *Hereford*) thought it a favorable opportunity to return home, and assert his rights. It is probable, that at this time he had no intention of aspiring to the crown.

On his arrival in England, he found the general discontent so great, and Richard's absence in Ireland so favorable to his views, that he, with great activity, raised an army of 60,000 men; and, on the king's return, marched against him, and soon after imprisoned him in the Tower of London.

Whilst there confined, Richard made a formal (but forced) resignation of his crown, to the Duke of Lancaster, who assumed the name of *HENRY IV.* He was then removed to *Lerd's*, and from thence to Pontefract Castle, where he starved himself to death in a fit of despair, A. D. 1400. He was thirty-four years of age.

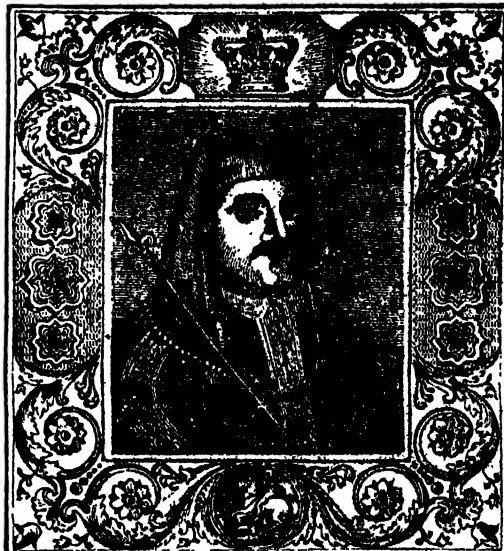
The chief errors of Richard's reign arose, probably, from his being too early left to his own guidance, and the ill counsel of

unworthy favorites. He was amiable, generous, and magnanimous, but his good qualities, carried to excess, degenerated into vices.

Among the cotemporary sovereigns of *Richard II.* were *Emmanuel II.*, Emperor of the East; *Charles IV.*, Emperor of the West and Bohemia; *Pope Urban VI.*; *Charles V.*, King of France; *Charles III.*, King of Navarre; *John I.*, King of Aragon; *John I.*, King of Portugal; *Charles I.*, King of Naples; *Louis I.*, King of Hungary and Poland; *Basil III.*, Czar of Russia; *Margaret*, Queen of Denmark, Norway, and Sweden; *Robert III.*, King of Scotland.

PERIOD IX.

FROM THE ACCESSION OF THE HOUSE OF LANCASTER, TO THE UNION OF THE HOUSES OF YORK AND LANCASTER.



HENRY IV.

Although *Richard* had no child, *Henry* was not the heir to the crown, and his usurpation caused, in after times, bloody civil wars, between his descendant and those of *Lionel*, Duke of Clarence, the elder brother of *John of Gaunt*, *Henry's* father.

The first years of *Henry's* reign were so disturbed by conspiracies, that the *Welsh*, under *Owen Glendower*, disclaimed the sovereignty of England, marched into Herefordshire, and took the Earl of March prisoner. As he was the rightful heir to the crown, this was by no means disagreeable to him.

The *Scots* likewise took advantage of the difficulties under which *Henry* laboured, to make inroads into Northumberland; they were, however, twice defeated by the Earl of Northumberland and his son *Henry Percy*, surnamed *Hotspur*.

The domestic troubles of *Henry* were little less than his political ones. His eldest son proved a debauchee and vicious prince, associating with riotous and disorderly persons, and even joining in committing a robbery on the highway. On one occasion, when one of his companions was brought before *Sir William Gascoyne* for a riot, he was so displeased with the judge, for the punishment awarded, that he struck him in open court.

Unawed by his high rank, and determined to support the dignity of the law, *Sir William* immediately committed the prince to prison. And *Henry* had afterwards, when he mounted the throne, good sense enough to appreciate this spirited conduct, and to commend the venerable patriot.

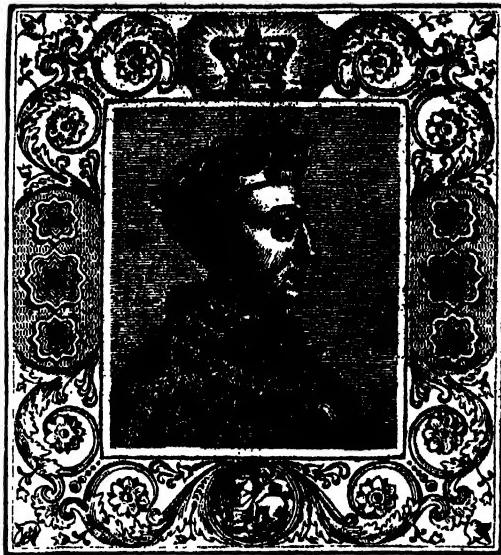
Henry having displeased the earl of Northumberland, by refusing him permission to ransom some Scotch noblemen whom he had taken prisoners, the earl revolted, and raised an army against his sovereign. His troops were defeated at *Shrewsbury*, A. D. 1403, and *Henry Percy* was slain. In this engagement, the Prince of *Wales* displayed great valour.

Having now subdued his enemies, *Henry* expected to reign in tranquillity, but his constitution being impaired by fatigue, anxiety,

and domestic griefs, he expired March 20th, 1413, in the 46th year of his age.

Henry's character was of a mixed kind. He possessed great courage, fortitude, and penetration; and would have formed a dignified and amiable character, had not his ambition caused him to commit many vices. Being an usurper, he was frequently obliged to shed the blood of his subjects, to maintain himself on the throne but his usurpation cost posterity more dearly than it did those who lived in his immediate reign. He was of middle stature, and his countenance was severe and sullen.

Among the cotemporary sovereigns of Henry IV. were *Emanuel II.* Emperor of the East; *Robert*, Emperor of the West and King of Bohemia; *Pope Gregory XII.*; *Charles VI.*, King of France; *Charles III.*, King of Navarre; *Ferdinand I.*, King of Arragon; *John I.*, King of Portugal; *John II.*, King of Castile and Leon; *Ladislas*, King of Naples; *Mary*, Queen of Hungary; *Jagellon*, King of Poland; *Basil III.*, Czar of Russia; *Margaret*, Queen of Denmark, Norway, and Sweden; *Robert III.*, King of Scotland. [Upon the death of Robert is an interregnum from 1406 to 1424.]



HENRY V.

HENRY V., on his accession, determined to lay aside his profligate habits, to give up his dissolute companions, and to conduct himself as became a king, and the father of his people.

Conscious of the advantages to be derived from the counsels of wise and experienced men, *Henry* retained his father's most able ministers, to whom he added others of known integrity and skill.

From the influence of superstition, and not from inherent cruelty, he persecuted the reformers, who were denominated *Lollards*, many of whom were burnt in this reign.

France being in a distracted state, *Henry* thought it a good opportunity to attempt the recovery of the provinces that had been taken from the English, and even to revive the former pretensions to the crown. Accordingly he assembled an army at Southampton, but while he lay there, waiting its embarkation, a conspiracy was discovered to assassinate him, for which the *Earl of Cambridge*, *Lord Scroop*, and *Thomas Gray*, suffered as traitors.

Henry landed at *Havre*, August 21, 1415, and besieged and took *Harfleur*. His troops being, however, much wasted by fatigue and sickness, he marched towards Calais, but found his way interrupted by a French army, four times as numerous as his own. Notwithstanding this disparity, and the wasted strength of his men, *Henry* fought, and gained the celebrated battle of *Agincourt*, in which, the number of French slain, and the prisoners, exceeded the total of his army. This great conflict took place, October, 13, 1415.

Henry returned to England to recruit his forces. In 1417, he again crossed the channel, and going on from victory to victory, entered *Paris* as a conqueror, married *Catharine*, the daughter of *Charles VI.*, and was acknowledged heir of that monarch.

Had *Henry* lived, it is possible, that England might have be-

come subordinate to France, as he would probably have fixed his residence at Paris. He died in the 34th year of his age, A. D. 1422; and was buried in Westminster Abbey.

After his accession, *Henry* gave manifest proofs of a thorough reformation of character. His passion for military glory, tended more to the renown, than the advantage of his kingdom; and the provinces in France, which he gained at the expense of so much blood and treasure, proved but a transient and useless acquisition.



HENRY VI.

HENRY VI. was only nine months old at the death of his father. The Dukes of *Bedford* and *Gloucester* were therefore appointed regents; the former in France, the latter in England.

Charles VI. dying in October 1422, *Henry* was proclaimed King of France, according to the treaty. But the Dauphin, who protested against that treaty, assumed the sovereignty as *Charles VII.* For some time his efforts to recover his dominions were very unsuccessful, but at length he was put in possession of his rights in the following extraordinary manner.

A servant at an inn, named *Joan of Arc*, professed to be commissioned by heaven to drive the English from France. The affairs of Charles being almost desperate, he readily listened to any thing, however improbable, that seemed to promise him success.

Joan was accordingly equipped in armour, and placed at the head of the French army; her first exploit was the relieving of *Orleans*, which was besieged by the English. She then went on, from conquest to conquest, until great part of France was subdued; when she unfortunately was taken prisoner, and burnt as a sorceress.

The death of *Joan*, however, did not retrieve the English affairs; they continued to lose ground, until Calais was all that was left to them of their vast possessions in France.

In 1327 *Catherine*, the widow of *Henry V.* married *Owen Tudor*, a private gentleman of Wales, and from that marriage sprung the royal house of that name, which sat on the English throne.

In 1444, *Henry* married *Margaret of Anjou*, a spirited princess, who took a conspicuous part in the subsequent civil contests.

Encouraged by the feebleness of the hand that held the sceptre, *Richard Duke of York*, descended from an elder branch of the family of Edward III., then the reigning king, claimed the crown, and proclaimed *Henry* a usurper.

In the wars that ensued, the distinguishing badge of the house of Lancaster was a red rose, that of York a white; from hence these were called the Wars of the Two Roses.

These terrible contests filled England with slaughter, anarchy and desolation; in one of them the Duke of York was slain, but his eldest son *Edward* assumed the same pretensions, and, by the assistance of the Earl of Warwick, defeated the Lancastrians, near *Market* in Yorkshire, A. D. 1460.

Henry, with his queen and son, took refuge in Scotland, and

his rival was proclaimed king in London, by the name of EDWARD IV.



EDWARD IV

EDWARD, after his accession to the throne, was obliged, by the persevering activity of Queen Margaret, to fight several battles with the Lancastrians, in which he was uniformly successful.

His own imprudence, at length, drove him from the kingdom for a time. He had sent the Earl of Warwick to France, to ask for him the hand of the Princess *Bona of Savoy*, but in the mean time he married Lady Elizabeth Gray, a young and beautiful widow. Enraged at this affront, *Warwick* went over to the Lancastrian party; and, returning to England, fought with Edward near Nottingham, defeated him, and compelled him to take refuge in *Holland*.

Henry was now released from the Tower, and replaced on the throne; but his prosperity was of short continuance; *Edward* renewed his efforts; he engaged *Warwick* near *Barnet*, defeated and slew him; he then attacked the army of Margaret, near *Tewkesbury*, and gained a complete victory. The death of *Henry* and his son, who were assassinated by the Duke of Gloucester, gave him undisturbed possession of the crown.

Edward now gave a loose to the natural cruelty of his disposition, and the executioner put to death such of the adherents of the hapless *Henry* as the field of battle had spared. After these dreadful scenes were terminated, *Edward* gave himself up to licentious gratifications, which brought him to his end, A. D. 1483, in the forty-second year of his age. In this reign the *Art of Printing* was first introduced into England.

Contemporary sovereigns with *Edward IV.* were *Mahomet II.*, Emperor of the Turks,* *Frederick III.*, Emperor of the West; *Louis XI.*, King of France; *John I.*, King of Navarre; *Ferdinand II.*, King of Aragon; *Isabella*, Queen of Castile and Leon; *Alfonso V.*, King of Portugal; *Casimir*, King of Poland; *James III.*, King of Scotland; *John II.*, King of Denmark and Sweden; *John III.*, Czar of Russia; *Ferdinand I.*, King of Naples; *Ladislaus VI.*, King of Bohemia; *Coron*, King of Hungary.

EDWARD V.

EDWARD was only twelve years old at his father's death; his uncle *Richard*, Duke of Gloucester, therefore assumed the government, as Protector of the Realm. Not satisfied with this station, his ambition aspired to the crown, to which he made way by the

* The Eastern Empire was extinguished by the Turks, under *Mahomet II.*, who took Constantinople, and there established the seat of their power, A.D. 1453.

† Isabella married *Ferdinand II.*, King of Aragon; by this marriage, Castile and Leon became united, and have ever since remained so, under the general title of the Spanish Monarchy.



murder of *Edward*, and his brother, *Richard*, Duke of York. The two princes were smothered in the Tower, by ruffians employed for that purpose, when the youthful monarch had reigned only two months and twelve days. He was succeeded by *Richard*, Duke of Gloucester.



RICHARD III.

RICHARD, Duke of Gloucester, usurped the throne in 1483, by the name of *Richard III*. As he obtained the crown by the most unjust and cruel measures, his name has been coupled with every vile and opprobrious epithet; but, he was brave, and where his own interests were not concerned, just and judicious.

His baseness to his innocent nephews, and to the sons of the queen whom he beheaded, together with *Lord Hastings*, and others who opposed his usurpation, caused him to be held in detestation by all good men, at home and abroad.

He had not long been seated on his ill-gotten throne, when the Duke of Buckingham, who had been chiefly instrumental in his elevation, claimed his promised reward; but the duke, upon his meeting with a harsh refusal, rebelled, and was shortly after defeated, taken prisoner, and beheaded.

But a more formidable opponent soon presented himself

HENRY, Earl of Richmond, son of Owen Tudor, and Margaret, was the only surviving male descendant of the House of Lancaster. As he was willing to espouse the Princess Elizabeth, daughter of Edward IV., and thus unite the *House of the Red Rose*, he was invited to England, to meet the usurper from his throne.

Accordingly, with a small force, he landed at Milford Haven, but his army was soon greatly augmented. Richard lost no time in marching against him; and a decisive battle was fought near *Bosworth*, in Leicestershire, whereof Richard was killed, August 23d, 1485, aged thirty-four. With him ended the bloody contests between the *House of York* and *Lancaster*. History scarcely affords a character so thoroughly evil, wicked, and ambitious, as Richard III.

PERIOD X.



HENRY VII.

(THE HOUSE OF TUDOR.)

Immediately after the battle of Bosworth, the Earl of Richmond was proclaimed king on the field, under the title of **HENRY VII.** and having a few months after married the Princess Elizabeth, his title became indisputable.

The commencement of his reign, however, was disturbed by pretenders to the crown. The first was *Lambert Simnel*, the son of a baker, who pretended to be the Earl of Warwick, son of the Duke of Clarence, whom Edward IV. had put to death. Simnel, however, was soon defeated, taken prisoner, and appointed a scullion in the king's kitchen.

The next was more formidable. An opinion was prevalent, that *Richard*, Duke of York, had not been murdered in the Tower, as had been reported, but had escaped to Flanders. One *Perkin Warbeck* personated this young prince, was acknowledged in France, Flanders, Ireland, and Scotland, and married in the last-mentioned kingdom to a daughter of the Earl of *Huntly*.

After causing Henry much trouble, *Perkin* fell into his hands, and was hanged, A. D. 1499. But many are even now of opinion that he was really the person he pretended to be. The unhappy Earl of Warwick, was sacrificed at the same time to Henry's apprehensions.

Henry having thus removed all rivals, turned his thoughts to his amassing of wealth, and the improvement of commerce. He lessened the power and riches of the nobles, and increased the extent of towns, and the importance of the middle classes; thus laying the foundation of that independence and commercial greatness which we at present enjoy.

In the midst of prosperity, Henry was cut off by a consumption, A. D. 1509, in the fifty-second year of his age, leaving a character of avarice, extortion, and cruelty, behind him. In this reign

Columbus discovered the *New World*, and the Portuguese the way to India, by the way of the Cape of Good Hope.

Contemporary with Henry VII. were *Ferdinand* and *Isabella*, King and Queen of Spain; *Martin Luther*, Emperor of Germany; *Louis XII.*, King of France; *John II.*, King of Portugal; *James IV.*, King of Scotland; *Ferdinand*, King of Naples; this crown remained united to Spain till the year 1707; *Basil V.*, Czar of Russia; *Ladislaus VI.*, King of Hungary; *Alexander*, King of Poland.



HENRY VIII.

HENRY was scarcely nineteen years of age, when he began his reign under the most favourable auspices; an undisputed title, a rich treasury, and a kingdom at peace.

But Henry wanted that judgment, and those virtuous principles, which would have led him to make a good use of these advantages, and to promote the real happiness of his subjects.

Soon after his accession he entered into a war with France; but, after expending much of the treasures left him by his father, in preparations for carrying it on, and forming an alliance with Ferdinand of Spain, he suddenly agreed to a peace.

The Scots, ever ready to take advantage of circumstances against England, invaded the kingdom with 60,000 men; but they were met in *Flodden Field*, by the Earl of Surrey, with only 20,000, where they were defeated, and their king, *James V.*, slain.

In 1514, *Thomas Wolsey*, who for services rendered Henry VII., had been first presented to the deanery of Lincoln, and had risen in favour both with him and his son, until he became prime minister, was promoted to the archbishopric of York, and by Leo X., made a cardinal.

Although a man of learning, great sagacity, and high in the church, he made himself useful to Henry in a political point of view, by replenishing his exhausted coffers, no matter by what means, and whether agreeable or otherwise, by laying aside the dignity of his clerical character, and in joining all the sprightly revelry of the court.

But Wolsey at length fell into disgrace, for opposing Henry's divorce from *Catherine*, his elder brother's (*Arthur's*) widow, whom he had married. He was arrested for high treason, but died before he was brought to trial.

About this time *Martin Luther*, a German monk, was making many converts from the Roman Catholic religion. Henry wrote a book against this reformer, for which he received from the pope the title of "Defender of the Faith." Not long after, he renounced his allegiance to the pope and declared himself "The supreme Head of the Church."

Inconstant and cruel, Henry married no less than six wives, two of whom, *Catherine of Aragon*, and *Ann of Cleves*, he divorced; two, *Ann Boleyn*, and *Catherine Howard*, he caused to be be-

headed; Jane Seymour died in childbirth, and Catherine Parr survived him.

Notwithstanding Henry changed his own sentiments in religion, he required that his subjects should always conform to his views. Many, therefore, were burnt at the stake, because they could not alter their opinions whenever it should please the king.

Although we may date the commencement of the Reformation from the innovations made by Henry VIII., they were not in him the result of true piety, but of mere tyranny and caprice. Thus God produces good from evil. The bible was first translated into English in his reign.

In 1538, and the following year, Henry suppressed most of the monasteries in England and Wales, and seized their revenues. Several of the most powerful and wealthy abbots were hanged for resisting this spoliation.

At length this unprincipled tyrant, who acknowledged no law but his own will, and to whom humanity seemed a total stranger, was, after suffering great agonies, which threw him into paroxysms of rage, taken away by death, January 28, 1547, aged nearly 56.

Henry was, in his early years, handsome, but he became corpulent and bloated. He possessed a good understanding, which would have saved him from many errors, had it been cultivated by a proper education. He was rash, prodigal, pedantic, and superstitious, and his quarrel with the court of Rome was merely because he could not endure a superior.

Contemporary with Henry VIII., were Charles V., Emperor of Germany; Pope Adrian VI.; Louis XII., King of France; Charles V., (the Emperor) King of Spain; John III., King of Portugal; Selim, Emperor of the Turks; Sigismund, King of Poland; Ferdinand, King of Hungary (in whom the crown of Hungary passed into the family of Austria, Emperors of Germany, with which it has ever since remained); Ann, Queen of Bohemia, married Ferdinand, King of Hungary (afterwards Emperor of Germany), in which family the crown has ever since remained; John IV., Czar of Russia; Christian II., King of Denmark and Sweden; these kingdoms were separated in 1523; Gustavus Vasa, King of Sweden; Mary, Queen of Scotland.



EDWARD VI.

EDWARD VI. was only nine years of age when he succeeded to the throne, and had for his guardian and protector of the realm, his uncle Edward Seymour, Earl of Hertford, and afterwards Duke of Somerset.

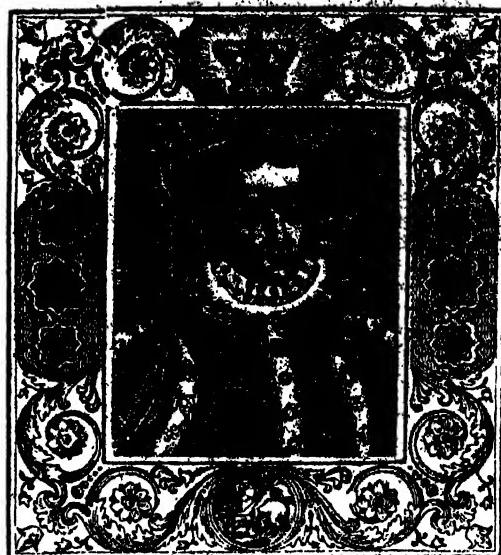
Edward having been educated in Protestant principles, and the protector being favourable to the Reformation, the Church of England was, in this reign, established as it exists at the present day.

A change so sudden, could not but excite the regrets and resentment of the old clergy, and the adherents to the Roman faith, and Somerset soon fell a victim to their machinations. He was accused of treason, and beheaded A. D. 1551.

The Earl of Warwick, the most active and powerful enemy of Somerset, succeeded him as protector. He was exceedingly ambitious, and not satisfied with the title of Duke of Northumberland, which was bestowed on him; married his son, Lord Chifford Dudley, to *Lady Jane Grey*, who was of the blood royal.

The princesses Mary and Elizabeth having been declared illegitimate, by the obsequious parliament of Henry VIII. Northumberland prevailed on the young king, whose health was declining, to nominate *Lady Jane Grey* as his successor.

Soon after this, the amiable and pious Edward expired, notwithstanding suspicion of poison, in the sixteenth year of his age, A. D. 1553. He created many charitable institutions, among the chief of which were *St. Bartholomew's* and *Bridewell Hospital*.



MARY.

No sooner was the death of Edward announced, than Northumberland hastened to proclaim *Lady Jane Grey* Queen of England; but this aspiring nobleman was so disliked, that few espoused the cause of *Lady Jane*, his daughter-in-law.

Finding that the Princess Mary, eldest daughter of Henry VIII., was universally accorded as the rightful successor to the throne, *Lady Jane*, after the short reign of nine days, voluntarily relinquished a title that had been imposed upon her.

But MARY soon gave an earnest of that cruelty which she afterwards more amply displayed, by causing *Lady Jane*, her husband *Lord Dudley*, and many noblemen and gentlemen to be beheaded for high treason.

Having been strictly educated by her mother, Queen Catherine, in the Roman Catholic religion, her next care was to reconcile herself to the Pope, and to reinstate the papal clergy. Her marriage with Philip II., the bigoted monarch of Spain, increased her hostility to the *Reformation*. The Archbishop of Canterbury, three bishops, and about 300 other persons, suffered death for their adherence to Protestantism in this reign.

MARY having been deserted by her husband, and finding herself hated by her subjects for her bigotry, cruelty, pride, and avarice, died, as is supposed, of a broken heart, Nov. 17, 1558, in the 43d year of her age. She was succeeded by her half-sister, Elizabeth.

Contemporary with Mary were Charles V., Emperor of Germany and King of Spain; Henry II., King of France and Navarre; Philip, King of Spain; Solyman II., Emperor of the Turks; John III., King of Portugal; Sigismund II., King of Poland; John IV., Czar of Russia; Christian III., King of Denmark; Gustavus Vasa, King of Sweden; Mary, Queen of Scotland.

THE GUIDE TO KNOWLEDGE.

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AUTHOR OF "PINNOCK'S CATECHISM," "GRAMMAR OF GEOGRAPHY AND HISTORY," ETC., ETC.

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PRICE
ONE PENNY.



ELIZABETH.

ELIZABETH, daughter of Henry VIII. by *Ann Boleyn*, succeeded to the throne at the age of twenty-five. As she was of the reformed religion, and had been pronounced by the Parliament illegitimate, she found a dangerous rival in *Mary*, Queen of Scots, who claimed the crown.

By her wise and prudent conduct, however, she soon so ingratiated herself with her subjects as to become firmly seated on the throne. Her most formidable enemy was *Philip* of Spain; her late sister's husband, who had made her an offer of marriage, but was rejected.

Mary, Queen of Scots, having been dethroned by her nobles, fled into England for safety. But Elizabeth, who owed her a grudge for her pretensions to the crown, detained her a prisoner; and after a confinement of nearly nineteen years, caused her to be beheaded, at Fotheringay Castle, February 8, 1587.

Burning with resentment at his rejection, Philip prepared a most formidable armament for the subjugation of England. It consisted of 130 ships, much larger than had ever before been built, and many smaller vessels, having on board an army of 20,000 men. The Pope named it "*The Invincible Armada*." To oppose this force, Elizabeth could assemble but a small fleet of very inferior vessels; but they were well manned, and commanded by very distinguished officers. The vast bulk of the Spanish ships rendering them unwieldy, the English gained a complete victory over them, and a storm having scattered and destroyed many of those that escaped the victors, very few returned to Spain.

The danger of invasion from Spain being thus happily passed, Elizabeth turned her attention to Ireland, which was in a state of rebellion and anarchy. With some difficulty this refractory island was subdued, and compelled to submit to the yoke of England. By the assistance of Elizabeth, the "*United Provinciers*" of Holland withdrew from the dominion of Spain, and became an independent Republic. But the glory of Elizabeth was greatly tarnished by her severity to *Mary*, Queen of Scots, and to the sectaries in religion. Her fondness for adulteration, and predilection for the Earls of Leicester and Essex, have likewise been blamed. The rash conduct of the latter occasioned him to be beheaded; but Elizabeth took his death

so much to heart, that it hastened her own, which took place A.D. 1613, in the seventieth year of her age.

The reign of *Elizabeth* is regarded as the beginning of English greatness: and the people began to enjoy that freedom of spirit which has since rendered their country the first among the states of Europe.

In this reign was born the celebrated dramatic writer, *Shakespeare*, A.D. 1564. Sir Walter Raleigh first brought tobacco into England, from Virginia, in 1583. Coaches were introduced into this country in 1589, and watches in 1597.

Among the cotemporary sovereigns of *Elizabeth* were *Rudolph II.*, Emperor of Germany; *Henry IV.*, King of France and Navarre (in this reign the two kingdoms became united, and have remained so to the present day); *William I.*, Stadholder of Holland; *James VI.*, King of Scotland; *Mahomet III.*, Emperor of the Turks; *Anthony*, King of Portugal, after whose death, in 1599, this kingdom was united to Spain during forty-five years; *Philip II.*, King of Portugal; *Sigismund*, King of Sweden and Poland; *Christian IV.*, King of Denmark; *Theodore I.*, Czar of Russia.

PERIOD XI.



JAMES I.

By the death of *Elizabeth*, JAMES VI. of Scotland ascended the English throne, in consequence of his descent from Margaret, daughter of Henry VII. James began his reign by an attempt to unite the kingdoms of *England* and *Scotland* into one; but was prevented from accomplishing his wishes by the jealousy of the English. The Roman Catholics had expected from the king some condescensions in their favour; but being disappointed, they formed the desperate resolution of destroying both king and parliament, by blowing up with gunpowder the place wherein they were assembled. This catastrophe was to have taken place on the 5th of November, but the plot being discovered, the conspirators fled, and were afterwards apprehended and executed; a punishment they richly deserved.

It would, however, be unjust to charge this absurd and bloody conspiracy on the generality of the Catholics; it was too base, and

too decidedly unsuited to the purpose it was intended to answer, to have been the device of any but a few infatuated men.

JAMES I., a learned, religious, and peaceful prince; his reign is chiefly distinguished by the encouragement and improvement in the arts, civic liberty, and the extension of commerce. The greatest weakness in James was his encouragement of favourites who were unworthy of his countenance. Of these, the most remarkable were *Robert Carr*, whom James created Earl of Somerset, and *George Villiers*, afterwards Duke of Buckingham, who rendered him, odious to the people, and was at length, in the succeeding reign, assassinated by *Felton*.

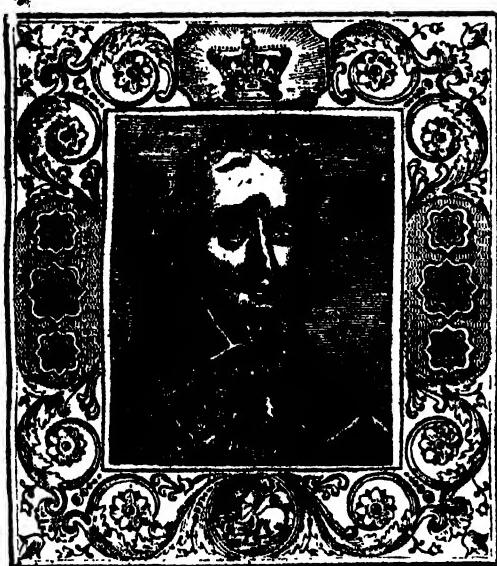
To his high notions of kingly prerogative, which gave great distrust to his subjects, his unhappy son, *Charles*, owed those mistaken principles which induced measures that brought him at length to the scaffold.

James died, after a peaceful reign of 22 years, in 1625; thus happily escaping the sorrows which a longer life would probably have heaped upon him, from the change which was taking place in men's minds on the subject of monarchical government.

Shortly after the death of *Elizabeth*, a conspiracy had been entered into, for raising to the throne *Lady Arabella Stuart*, first cousin to James; in which conspiracy Sir *Walter Raleigh* was accused of taking part; and after a confinement of twelve years in the Tower, was beheaded. During his imprisonment, he wrote his incomparable "History of the World."

In this reign flourished the celebrated painter, *Reubens*, and *Indigo Jones*, the architect. *Baronets* were first created in England by *James I.*, in the year 1611.

Among the contemporaries of *James I.* were *Ferdinand II.*, Emperor of Germany; *Pope Gregory XV.*; *Louis XIII.*, King of France and Navarre; *Philip IV.*, King of Spain and Portugal; *Maurice*, Stadholder of Holland; *Sigismund*, King of Poland; *Amurath IV.*, Emperor of the Turks; *Michael*, Czar of Russia; *Christian IV.*, King of Denmark; *Charles IX.*, King of Sweden.



CHARLES I.

Never did monarch come to the throne of England with greater prospects of enjoying a happy and glorious reign, than did CHARLES I. He found himself possessed with a peaceful and flourishing kingdom, his right undisputed by rival claimants, strengthened by an alliance with one of the most powerful monarchs that ever reigned in France, whose sister he had married; and to add to all this, loved by his subjects, whom he had won by his virtues and address.

But that very union, which now looked so fair and promising, was, in after times, the cause of his downfall, and of the expulsion of his family from the throne, in consequence of his sons imbibing from their mother, a partiality for the Roman Catholic religion.

The high notions which Charles entertained of his royal prerogative, and his tenacious attachment to episcopacy, displeased him with his Scotch subjects, on whom he wished to force the appointment of bishops, hence was occasioned a rebellion in that kingdom.

In 1627, war was declared against France; but as the expenses far exceeded the revenue of the state, Charles ventured to raise money by illegal means, by which he gave great umbrage to his people. Indeed, many of his subjects resisted the impositions, and the steps taken by Charles to enforce the payment, occasioned the breaking out of a civil war in 1642.

Many battles were fought with various success, though generally to the disadvantage of the king. At length, in 1645, the fatal battle of *Naseby* totally ruined the royal cause, and the king threw himself for protection upon the Scottish army. The unfortunate have seldom any friends, Charles soon found this to be too true. The Scots, instead of protecting the fallen monarch, sold him into the hands of his enemies for £400,000.

The unhappy monarch was removed from place to place, and treated with great indignity. He was once fortunate enough to escape from confinement, and might have taken refuge in a foreign land, had not the folly or the treachery of his pretended friends, betrayed him into the hands of the governor of Carisbrook Castle, in the Isle of Wight, who was a republican.

He was now brought to trial, and condemned to be beheaded, which sentence was carried into effect at Whitehall, January 30, 1649. The Scots, when too late, repented of their perfidy, and raised an army in his favour, but were defeated by CROMWELL, the most successful commander of his age.

The misfortunes of Charles appear to have arisen, chiefly from his continuing to exercise that arbitrary power which had been practised with impunity by his ancestors, but which, the times would no longer bear.

The principal battles fought between Charles and the parliament, were those of *Edgehill*, *Newbury*, *Marston Moor*, and *Naseby*, above-mentioned. When Charles was beheaded, he was in the forty-ninth year of his age. He reigned twenty-four years, and was buried at Windsor.



COMMONWEALTH.

CHARLES, the son of the late monarch, assumed the title of King, but his hopes were crushed at the battle of Worcester, where the Scottish army, which had espoused his cause, was entirely defeated, September 3, 1651. The king was now hotly pursued, and

* A Commonwealth is that form of government in which the supreme power is lodged in the people; sometimes called a Republic, at others a Democracy.

narrowly escaped falling into the hands of his enemies; but, after the most extraordinary adventures and sufferings, he succeeded in reaching the continent.

Shortly after the House of Commons, under the influence of the army, abolished the House of Peers, and professed itself to be the representative of the people, in whom the right of government was vested.

But this assembly found itself too feeble to withstand the influence of CROMWELL, who was at the head of an army devoted to him. His uniform good fortune, and especially his recent conquest of Ireland, had rendered him too formidable to be resisted.

Finding the Parliament at times refractory, he caused it to be dissolved by force, and was immediately proclaimed Lord Protector of the Realm. He was soon after offered the crown, but thought it prudent to decline the dangerous honour.

Cromwell governed with vigour, and caused the nation to be respected by foreigners. He made war upon the Dutch and Spaniards, and gained many signal victories over their fleets. He also subdued Scotland, and annexed that country to England as a conquered province. England was never more powerful than at this period.

Cromwell compelled the Dutch to make peace upon his own terms; and every nation with whom the English had any connexion courted his alliance. He sent a fleet to the West Indies, and to Jamaica, which has ever since appertained to England.

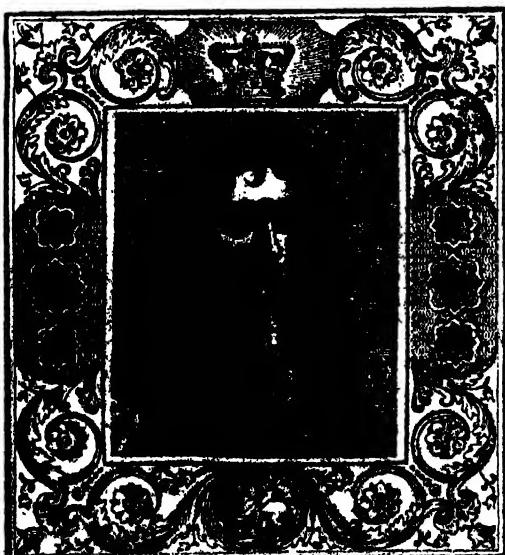
But a power maintained by the sword, must necessarily be precarious. Cromwell was so annoyed by frequent conspiracies attempts at assassination, pamphlets containing severe invectives against his person and government, and family misfortunes, that he fell ill and died September 3, 1658, in the sixtieth year of his age.

The character of Cromwell has been variously delineated; by some, he has been described as a consummate hypocrite; by others as a doted fanatic. All, however, allow him to have been a man of great abilities both as a statesman, and a military commander.

His son RICHARD succeeded to the Protectorate, but the reins of government soon fell from his feeble grasp, and he quietly returned to a private station. After a considerable interval of anarchy, Charles II. was restored to his kingdom.

Milton, the poet, lived during the period of the Commonwealth, and was employed by Cromwell as his Latin secretary.

The cotemporary sovereigns in the time of Oliver Cromwell were Leopold I., Emperor of Germany; Pope Innocent X.; Louis XIV. King of France; Philip IV., King of Spain; Alfonso IV., King of Portugal; Mahomet IV., Emperor of the Turks; William II., Stadtholder of Holland; John II., King of Poland; Alexis, Czar of Russia; Frederick III., King of Denmark; Charles X., King of Sweden.



CHARLES II.

CHARLES II. was the eldest son of Charles I., and was born

May 29, 1630. He was thirty years of age, when, in 1660, he was recalled from exile, and placed on the throne. His first care was to reform the many abuses that had crept into the government; and had he followed the advice of his counsellors, his reign, no doubt, would have been tranquil and happy. But adversity does not appear to have taught him a very useful lesson. His morals had been corrupted by licentious associates abroad, and the extravagance which he practised at home, soon brought him into difficulties, and compelled him to be guilty of姦淫 and tyranny.

With having been declared against the Dutch, several brilliant and obstinate naval actions took place, in some of which the king's brother James took a very active part. In 1665 a terrible plague carried off 100,000 of the inhabitants of London; and the next year a dreadful fire consumed above 13,000 houses. This last calamity proved, ultimately, a blessing, as London was rebuilt on a better plan, and the plague has never visited it since.

In this reign the celebrated "Act of Uniformity" was passed, by which 8000 persons were subjected to imprisonment for their religious opinions, many of whom died in confinement. Vast numbers fled to America, to avoid persecution.

The latter part of Charles's reign was remarkable for real or pretended plots against the government, and the Protestant religion. Encouragement was given to the most infamous characters to inform against the Jesuits and others, and many suffered death in consequence. Of the higher classes, Lord Russell and Algernon Sydney, perished on the scaffold. Essex was immured in prison, and Shaftesbury was compelled to flee into Holland.

To supply his extravagances, Charles married the Infanta of Portugal for the sake of her portion of 800,000l.; sold Dunkirk to the French for five millions of livres, and accepted a pension from the French king. From this time, he neglected to assemble his Parliament, and governed with an absolute sway.

In 1682 Charles was suddenly seized with an illness, which was denominated apoplexy, but there is reason to believe was the consequence of poison. After languishing a short time, he expired on the 6th of February, in 1685, having previously professed himself of the Roman Catholic persuasion.

Charles was of gay and sprightly manners, and greatly addicted to pleasure and extravagance; which compelled him to acts of meanness and oppression of which it is probable he was heartily ashamed. He founded the Royal Society in 1660. The use of tea was first adopted in England about the year 1660. St. James's Park was planted and made a thoroughfare in 1660. The Habeas Corpus Act, to secure all persons residing in Great Britain against false imprisonment, was passed in 1669.

In 1670 was formed the celebrated Cabinet Council, called the Cabal, from the first letters of the names of its members—Clifford, Arlington, Buckingham, Ashley, and Lauderdale. In 1678 was erected the statue at Charing Cross.

In this reign, Blood, a distinguished officer, stole the crown and other regalia from the Tower, but was detected before he could get off with his booty. The king undertook to execute him privately, and instead of punishment, ordered him an annual pension.

Cotemporary with Charles II. were Peter the Great, of Russia; Louis XIV., King of France; &c. &c.

JAMES II.

JAMES, Duke of York, ascended the throne on the death of his brother Charles, at the mature age of fifty-two, and would probably have reigned prosperously, had not his bigoted attachment to the Roman Catholic religion induced him to attempt its restoration.

Almost his first act was to punish Cootes, Dangerfield, and other informers, who had procured the condemnation of the popish priests and Jesuits in the last reign.

Knowing the aversion of the nation to popery, and that attempts had been made to set aside the succession of James, on account of his religion, the Duke of Monmouth, natural son of Charles II.

* This Act was passed against the Nonconformists, and known by the name of the Test Act; importing that every person in employ of the government should take the oaths of allegiance and supremacy.



mised an army, and laid claim to the crown. He was, however, defeated, taken prisoner, and soon after beheaded.

The design of the king to restore popery now becoming evident; seven bishops remonstrated with his majesty on the subject, for which freedom they were sent to the Tower. They were afterwards tried at Westminster Hall for a libel, and acquitted.

These and other arbitrary measures of James, so greatly disgusted the nation, that some of its leading men invited over William, Prince of Orange, who had married the Princess Mary, James's eldest daughter, to interpose, and put a stop to them.

WILLIAM accordingly appeared off Torbay with a fleet and army, and was received with enthusiasm by the people. Soon after his arrival, James fled the kingdom, and the throne being declared vacant, WILLIAM and his consort MARY were proclaimed joint sovereigns, February 13th, 1689.

This great event is generally called "The Glorious Revolution of 1688."

James II. not being formed to govern, he prudently laid down his sceptre, when he could no longer hold it. His rival William, therefore, had no honour in depriving James of what he had no spirit to vindicate. All the glory that attached to William was, the spirit with which he maintained his throne, and the liberal blessings of liberty he confirmed on his subjects.

WILLIAM III. AND MARY II.

On the accession of WILLIAM, the papists were removed from offices of trust and emolument, and most of the penal statutes against Nonconformists were repealed. Presbyterianism was declared to be the national religion of Scotland, and episcopacy abolished.

The prevailing religion in Ireland being the Roman Catholic, James had many partisans in that kingdom; he, therefore, having been assisted by the French king with men and money, came over to Ireland: but being defeated at the battle of the Boyne, he once more fled into France.

In 1692, a formidable French fleet appeared off the coast, for the purpose of invading England in favour of James, but it was met, and defeated by Admiral Russell, with the loss to the French of twenty-one ships.

The cause of James having now become desperate, the King of France turned his arms against the continental powers; William, in consequence, immediately put himself at the head of the French opponents, and firmly withstood the French monarch's ambitious attempts. Although he seldom gained a victory, he rendered those of his adversary very dearly bought.

In 1694 died William's consort, Queen Mary; who was greatly lamented for her amiable qualities. And on the 5th of September 1701, James II. expired at St. Germans. As France was then



at war with England, the son of James was proclaimed at Paris King of England.

In 1702, the king, whose health had some time been declining had the misfortune to fall from his horse, and break his collar-bone; this brought on a fever, of which he died, March 8, in the fifty-second year of his age.

WILLIAM appears with all the characteristics of a Dutchman—cool, phlegmatic, and taciturn. He was a brave and skilful, but not a very fortunate general, and his interference with the wars on the continent, entailed an expense on the nation which laid the foundation of the national debt.

In this reign the Bank of England was established; and the Land-tax dates its origin from the same period. In 1695, the Czar of Muscovy came into England and worked as a ship-carper, but incognito.

Among the cotemporary sovereigns with William were Peter I., of Russia; Frederick I., King of Prussia; Charles XI., King of Sweden; Augustus I., King of Poland; Philip V., King of Spain; John V., King of Portugal; Louis XIV., King of France; Charles VI., Emperor of Germany; Achmet III., Emperor of the Turks.



ANNE.

On the death of William without issue, he was succeeded by

his wife's sister, *Anne*. She was married to *George*, Prince of Denmark, but the title of king was not conferred on her husband.

Almost immediately on her accession, war was declared against France, and a series of brilliant victories, achieved by the Duke of Marlborough, reduced the proud *Louis XIV.* to a most distressed condition, and compelled him to sue for peace.

So great was the national gratitude towards the Duke of Marlborough, that a splendid palace was built for him at the public expense, and named *Blenheim House*, from the glorious victory of Blenheim, gained under his command, and a large estate annexed to it.

At sea the English army were equally successful, and the French navy was reduced to a state of comparative imbecility. In 1704 *Gibraltar* was taken, and has remained in our possession ever since.

In 1707 the union of *Scotland* with *England* was effected, by which both kingdoms became one, under the title of the "Kingdom of Great Britain," to the great advantage of both countries, especially the former.

At this time there were two competitors for the crown of Spain: *Charles*, son of the Emperor of Germany, and *Philip*, grandson of *Louis XIV.*—*Anne* supported the former, and, by the assistance of her forces, he was, for a time, maintained on the throne; but *Philip* finally prevailed.

Towards the close of the queen's reign, the Duke of Marlborough lost his influence at court, and disputes ran so high between the parties of the Whigs and Tories, that the anxiety they caused in the mind of her majesty is supposed to have hastened her death, which took place August 1, 1714, in the fiftieth year of her age.

Queen *Anne* was considered rather amiable than great; and, like all her family, she was better calculated for the private duties of life than for a throne. In this reign literature flourished, and produced some of the greatest characters on record. *St. Paul's Cathedral*, as it now appears, was finished by *Sir Christopher Wren*, in the year 1710.

PERIOD XII.



GEORGE I.

(MONS OR BEAUFORT.)

The death of *Anne*, for a moment, revived the hopes of the exiled *Stuarts*, but they were quickly dispersed by the peaceful accession of *GEORGE*, Elector of Hanover, great-grandson of *JAMES II.*

But though these hopes were damped, they were not extinguished. A rebellion arose in Scotland, in favour of the son of *James II.*, usually styled the *PRETENDER*; but the rebels were defeated at *Preston*, in Lancashire, and many of the leaders perished on the scaffold.

This ill-success did not, however, prevent another attempt in 1722, but the conspiracy was happily discovered before it was put into execution. Several noblemen were committed to the Tower, but not prosecuted; Bishop *Atterbury* was banished the realm; and one *Christopher Sayer*, convicted of enlisting men for the *Pretender*, was hanged.

In 1727, the Spaniards made an unsuccessful attempt on *Gibraltar*; and soon after a negotiation for peace was set on foot. In June, the same year, the king set out to visit his Hanoverian dominions, but died at *Osnaburg*, June 11th, in the fifty-eighth year of his age, and was buried at *Hanover*.

Among the cotemporary sovereigns of George I. were , of Russia; *Charles VI.*, Emperor of Germany; *Louis XV.*, King of France; *Philip V.*, King of Spain; *John V.*, King of Portugal; *Peter Amadeus*, King of Sardinia; *Augustus*, King of Poland; *Frederick William*, King of Prussia; *Charles XII.*, King of Sweden; *Charles III.*, Emperor of the Turks.



GEORGE II.

GEORGE II. ascended the throne at the mature age of forty-five. The war with the Spaniards was now renewed, in consequence of their unjust and cruel treatment of the English logwood cutters, in the Bay of Campeachy.

The naval enterprises against Spain were eminently successful; many ships laden with treasures, from America, falling into the hands of the English, and enriching the captors. One of the most fortunate commanders in this respect was *Commodore Anson*.

The King of Prussia having attacked the hereditary dominions of the Archduchess *Maria Theresa*, France sided with that monarch, and the English monarch took the part of the injured princess. A battle was fought in 1743, at *Dettingen*, in Flanders, where *George* commanded in person, and gained a complete victory.

To create a diversion in favour of the Prussian monarch, and of the French operations on the continent, *Louis* furnished the *Pretender* with some money and ships for the invasion of England. In 1745, *Charles Edward*, his son, landed in Scotland, and erected his standard on behalf of his father.

Being joined by numerous bodies of *Highlanders*, he at first gained some advantages, and advanced as far as *Carlisle*, and *Manchester*, and from thence to *Derby*, and had he taken advantage of the general consternation, and marched immediately to *London*, the consequence might have been very serious.

Great dissensions, however, having broken out in his army, he determined to retreat, but was met at *Culloden*, near *Inverness*, by an army under the *Duke of Cumberland*, and totally defeated after a bloody contest, April 16, 1746.

The young *Pretender* escaped from the field of battle, and, after wandering about under various disguises, and in imminent danger,

for six months, at length got safely to France, but many of his adherents suffered for high treason.

In 1748, peace was made with the French by the treaty of Aix-la-Chapelle. In 1750, died Frederick Prince of Wales, who had long lived on ill terms with his father. In 1754, public indignation was roused by the encroachments made by the French on our settlements in North America; and soon after, war was proclaimed against that nation.

In this war, the great superiority of the British over the French navy was strikingly apparent. In one year above 300 of the richest French merchant-ships were captured, and in two years, 30,000 French seamen were prisoners of war in England.

In 1759, Quebec, the capital of Canada, was taken by General Wolfe, who lost his life on that occasion. In the East Indies the English army were triumphant under Colonel Clive, and the foundation was laid of that immense empire which now belongs to the English East India Company.

On the continent, many victories were gained, of which the most splendid was that of Minden, in which 9000 English are said to have defeated 30,000 French.

Whilst the affairs of the French were unfortunate by land, their fleets were equally unsuccessful by sea. On the 18th of August, 1759, Admiral Boscawen defeated the Toulon squadron, and took and burnt five ships of the line; and on November 20th, Admiral Hawkes triumphed over the Brest squadron, taking one ship of eighty guns, sinking two of seventy-four and seventy, and burning two of eighty and seventy-four.

Discouraged by these repeated losses both by sea and land, and embarrassed in their finances, the French showed an inclination for peace; but, before any effectual step was taken, the king died at Kensington, October 25, 1760, aged seventy-six.

George II. was of a hasty, passionate disposition, fond of military pomp, and remarkable for unusual bravery. He was excessively methodical and exact in all his proceedings, and extremely economical in his private concerns. But his government was, in general, regulated by the law. He has been accused of too great a partiality for his German dominions.



GEORGE III.

George III., the eldest son of Frederick, late Prince of Wales, succeeded his grandfather, October 26, 1760. The period of his accession was most propitious, as the British arms had been so successful over the fleets and armies of France and Spain, that those nations were glad to accept of peace on terms very advantageous to Britain.

But this sunshine of prosperity was soon overclouded by the discontents of the North American Colonies. An attempt to impose taxes on them aroused a spirit of resistance, which ended in total rebellion. Hostilities commenced with the battle of Lex-

ington, April 19, 1775, and continued with various success, until 1783, when peace was made, and America declared an independent state.

America was assisted in her revolt by the fleets and armies of France and Spain; the former, however, suffered severely, as in 1779, Sir Hyde Parker captured several French ships in the West Indies; and in 1780, Sir George Rodney took 26 Spanish ships.

This year dreadful riots took place in London, under pretence of opposing concessions to the Roman Catholics. Numerous chapels both of papists and dissenters were destroyed. Newgate, the Fleet and the King's Bench prisons were set on fire, and many lives were lost, ere the disorders could be repressed.

In 1789, great discontents broke out in France, which increased to such a degree, as to occasion a terrible revolution, in which rivers of blood were spilt, and all the ancient institutions of government were overthrown. The King, Louis XVI., the Queen, the Princess Elizabeth, and innumerable persons of rank and wealth were beheaded, and the most horrid massacres were perpetrated without regard to legal forms.

Most of the sovereigns of Europe endeavoured to stem this revolutionary torrent, but their armies were defeated, and their thrones endangered by the enthusiastic ardour of the French. At sea they were not so fortunate. In 1797, Earl St. Vincent obtained a complete victory over the Spanish fleet, and Admiral Duncan over the Dutch, at that time in alliance with France.

In 1798, Lord Nelson achieved a splendid victory over the French in Aboukir Bay, in Egypt; and, in 1801, brought away the Danish fleet from Copenhagen, after a bloody engagement. In his year Great Britain and Ireland were united into one kingdom.

In 1803, Napoleon Bonaparte, after having governed France as First Consul, was crowned Emperor of the French, and, soon after, King of Italy. In 1808, he made his brother Joseph King of Spain.

In 1805, Nelson defeated the combined fleets of France and Spain at Trafalgar, but lost his life in the engagement. Several other minor victories took place at sea, so that the French navy was nearly annihilated.

The king's infirmities having rendered him unfit to govern, the Prince of Wales was, in 1811, appointed Regent.

The wonderful successes of the French Emperor Napoleon had extended his direct or indirect sway over almost the whole continent of Europe. He had formed an alliance with Austria, by marrying the emperor's daughter, and seemed firmly seated on the throne of France, when an unsuccessful enterprise hurled him from that high eminence.

The Emperor of Russia having displeased him, Napoleon invaded his dominions with an immense army. He penetrated as far as Moscow, intending there to winter. But Moscow was destroyed by fire, so that the French army was compelled to retreat towards Poland.

During this retreat the winter set in with terrible severity, so that the French had to struggle at the same time with cold, famine, and the Russian armies. These complicated evils destroyed upwards of 400,000 men, and Napoleon having soon after lost the battle of Leipzig, abdicated, and was sent to the small island of Elba.

In Spain, the French cause was daily losing ground. Victory after victory was gained by Lord Wellington, of which the most celebrated were those of Salamanca and Vittoria.

After a residence of one year in Elba, Napoleon returned to France, and renounced the throne. The Allied Powers immediately hastened to drive him thence, and at the celebrated battle of Waterloo, his army was defeated by the Duke of Wellington, and he himself soon after banished to the island of St. Helena, where he died in 1821.

In 1816, Lord Exmouth bombarded Algiers, and compelled the Dey not only to liberate the Christian captives, but to abstain from piratical attacks on the ships of all Christian nations for the future.

George III. died on the 29th of January, 1820, in the eighty-second year of his age, and the sixtieth of his reign, the longest on record in the British annals. No lucid interval cheered or distracted his latter days. He lived a long, happy, and good life, and was among the best men of his time. He rose early, and was very fond of farming, attached to hunting, and devoted to his family. He was well-meaning and very pious, but a little infirmed with

bigotry and obstinacy. In his time a new turn was given to education; literature and sciences became more diffused; chemistry may be said to have undergone a new birth, and in this as well as other studies, utility was now, for the first time, considered as the great end and object.

His reign was interrupted by his malady first in 1765, and again in 1810. In his late years, blindness was added to his other deprivations, and he was deaf; yet, in his darkness and solitude, he talked to himself of past events, with melancholy accuracy. He often conversed with his attendants, but never seemed to forge that he was a king. He rose early, dined at one, and retired at eight o'clock. He was interred in St. George's Chapel at Windsor.

Among the cotemporary sovereigns of George III. were Pope Pius VII.; Francis II., Emperor of Germany; Louis XVI., King of France; Charles IV., King of Spain; Mary, Queen of Portugal; Charles Emanuel, King of Sardinia; Ferdinand IV., King of Naples; Frederick William III., King of Prussia; William V., Stadholder of Holland; Alexander, Emperor of Russia; Stanislaus Augustus, King of Poland; Christian VII., King of Denmark; Bernadotte, King of Sweden.



GEORGE IV.

The commencement of the reign of George IV. was clouded by the unpleasant measures consequent on the return of his consort to England, after an absence of several years. Charges against her of the most serious nature were laid before the House of Lords, and her Majesty appeared in person to answer those charges. After a long and patient investigation, the bill of impeachment was withdrawn, and thus her Majesty was virtually acquitted. But she was not allowed to share the honours of the coronation, and in a short time after she died, August 24, 1821.

A few days after his coronation, George IV. embarked for Ireland, where he was received with the most enthusiastic marks of attachment; and in August 1822, his Majesty paid a similar visit to Scotland, and experienced a similarly affectionate welcome.

The close of the year 1825, and the beginning of that of 1826, are peculiarly distinguished for numerous and important failures, which caused great distress and difficulties in the money market, that seventy-three banking-houses stopped payment in a few months, and so terrible was the shock which public credit received in consequence, that all confidence was lost, and the ruin spread into a thousand unexpected channels.

Among the memorable events of this reign, we must not forget to notice the war against the Burmese, which was prosecuted with

great vigour, and attended with very important results, the advantage of the British nation.

And also the sanguinary contest between the fleet of the combined powers of England, Russia, and France, led by Sir E. Codrington, and the Turkish fleet, in the harbour of Navarino, in which engagement the Turkish force was nearly annihilated. This great naval battle was fought on the 20th of October, 1827.

On the 13th of April, 1829, was passed, the bill for the emancipation of the Roman Catholics from civil disabilities, on account of their religion. A great and enlightened measure, strongly indicative of the decay of bigotry and superstition.

After a reign distinguished more for the encouragement given to the arts and sciences, more particularly to architecture, than for military glory, died George IV., on the 24th day of June, 1830, aged sixty-nine.



WILLIAM IV.

The historian who has to record the events and circumstances of his own time and nation, stands in a situation of responsibility, far more awful than he who writes from the authority of preceding chroniclers; some excuse may be made for one who falls into error by a reliance on the veracity of those that have gone before him, but no plea in extenuation can be found for the writer, who wilfully or ignorantly perverts the facts that come under his own observation.

It is the duty of those who write for posterity, to divest themselves, if possible, of all prejudices; but, more particularly (than on any other occasion), when the political affairs of nations come under discussion: perhaps, this is the greatest difficulty the historian has to encounter, but it is also the most important object; and though a dry recital of events may not afford equal entertainment, yet an adherence to candour, with but few comments mixed up in the narrative, will assuredly prove most instructive.

The character of a monarch is so blended with the ministerial narrations of his reign, that he may often be blamed for errors not his own, and praised for wisdom by which he was never distinguished; from this cause, we find our history so distorted, as to lie lives of various princes. Party feeling overflowed all bounds, and while the Monks were the only historians, no sovereign that ever opposed their rapacity for wealth and power, was allowed to rest to more than an ignominious tomb.

Instead of this still prevailing enmity are apparent in the columns of our daily prints, now the guiding vehicles of public opinion, and be that to day is to them a Deity, because of political concurrence, to-morrow may be a Demon, on account of ~~some~~ levity, or because he shall dare to think for himself.

WILLIAM IV., our present gracious sovereign, we may venture to say, has hitherto conducted the office of a King with such marked marks a judicious sense of what belongs to the

* In 1795, this king was deposed, and his dominions divided between Russia, Prussia, and Austria.

dignity of a prince; who, placing himself at the head of no party, is resolved to recognize no distinction of names, but to be, not nominally only, but virtually the patriot, and *Sovereign of ALL HIS PEOPLE*. We do not expect an universal assent to this declaration, for even the course of His providence who *rules over kings and kingdoms*, does not please the inveterately discontented.

His Majesty is the third son of *George III.*, by the late Queen *CHARLOTTE*, a princess of the House of Mecklinburgh Strelitz, a small principality in the north-west part of Germany.

William was born the 21st of August, 1765, and after a suitable education, was, at about fourteen years of age, entered as a midshipman in the naval service of his country, in which he continued seventeen or eighteen years, going through the usual routine of maritime duty, and on several occasions manifesting great personal intrepidity. In 1828, he was constituted *Lord High Admiral of England*, which office he shortly after relinquished; and on the demise of his brother, *George IV.*, in 1830, succeeded to the throne.

On his Majesty's accession the accustomed formalities were observed of proclaiming his titles at the appointed places; the late King's ministers were empowered to continue in office; and all magistrates and public functionaries were enjoined to remain in the discharge of their several duties. The court had for some time previous to this been void of its most splendid attractions, partly from the declining health of the late king, but more particularly from the want of that chief ornament—a *Queen Consort*. This defect was now happily repaired, by the introduction of his Majesty's spouse, the accomplished *ADELAIDE*, to whom he

With respect to commercial affairs, the currency of the realm, the charters of the Bank and East India Company, are matters of serious consideration; monopolies of any description are, perhaps, always injurious, unless in such cases, where the enterprise may be too great for individual means to accomplish. Upon the whole, the present servants of the crown do not seem essentially to differ from their predecessors in foreign or domestic policy, unless we may consider them more parsimonious in the national finances than was ever before attempted. An exhausted treasury, however, may be dangerous to the stability of government, should ~~exceeds~~ arise which require prompt and vigorous exertions, and a late decrease in the revenue shows, that a hasty abolition of ~~pecuniary~~ resources is not always wise policy.

So far as our affairs are connected with foreign countries, we may glance at their respective conditions. France appears yet in a very feverish state; the ebbing tide of her tremendously overwhelming revolution has not gone down without eddies in the current, occasioned by Bourbon obstacles to the stream of popular feeling. *Charles X.*, her now discarded monarch, has sought protection in this sanctuary of liberty; the land round which that guardian goddess has cast her ~~egis~~, and chosen it as her safe abode; the hospitable region where the oppressed and persecuted have refuge, and where misguided exiles may, undisturbed by the violence of revenge, have time to reflect and retract their errors.¹¹

Russia, that growing giant, is still seeking to augment her dominions, and the question of *BELGIC INDEPENDENCE*, and the partition of territory, is yet unsettled.

In PORTUGAL, the struggle for her crown between two brothers, awaits either the simultaneous decision of the people, or the success of the sword, in shedding the blood of thousands, who are arrayed on the one side and the other, to decide this unnatural contention.

What effect these commotions and negotiations may have upon *England* in their results, is uncertain; but that her honor may remain untarnished, and her welfare defended, we trust her people have courage and resolution enough to ensure.

CONVERSATION ON THE PRECEDING CHAPTERS, BEGINNING WITH THE HOUSE OF NORMANDY.

Q. How many kings of England were there of the House of Normandy?

A. Three; namely, *William I.*, surnamed the Conqueror; *William II.*, and *Henry I.*

Q. When did William the Conqueror commence, and when close his reign? And by whom succeeded?

A. William commenced his reign A.D. 1066, and died 1087, and was succeeded by his son *William*.

Q. When and how long did William reign?

A. *William II.* commenced his reign A.D. 1087, and died A.D. 1100. He was succeeded by *Henry I.*

Q. When, and how long did Henry reign, and by whom was he succeeded?

A. Henry reigned from A.D. 1100 to A.D. 1135, and was succeeded by his nephew *Stephen*, Earl of Blois.

HOUSE OF BLOIS.

Q. When did Stephen ascend the throne? How long did he reign? and by what title or claim had he to the crown of England?

A. Stephen commenced his reign A.D. 1135, and died A.D. 1154, when he was succeeded by his cousin, *Henry II.*. Stephen claimed his right to the crown from having married *Adela*, the seventh child of William the Conqueror; the rightful heir, however, was *Henry II.*

Q. How many kings were there of the House of Blois?

A. One—namely, *Stephen*.

HOUSE OF PLANTAGENET.

Q. How many kings of England were there of the House of Plantagenet?

A. Eight—namely, *Henry II.*, *Richard I.*, *John*, *Henry III.*, *Edward I.*, *Edward II.*, *Edward III.*, and *Richard II.*; the latter of whom was deposed by his cousin *Henry*, Duke of Lancaster.

Q. How long did the House of Plantagenet reign; and by what house succeeded?

A. The House of Plantagenet reigned from A.D. 1154 to 1399, when it was succeeded by the House of Lancaster, as above mentioned.



had been some time previously married, and who was now raised to the dignity of QUEEN, a dignity that is not diminished by her Majesty in its performance.

No period of British History was ever more fruitful of important events than the present: great changes have been recently effected in the political state of the nation, and others are still in contemplation, both with respect to the economy of government, the jurisprudence of the country, and the administration of the civil law. A bill for an extensive reform in the representation of the people in the *Commons House* of Parliament has passed into a law, and also separate bills of the same import for *Scotland* and *Ireland*.

The subject of tithes, as a means for supporting the clergy of the established church, has long been a consideration, on which different opinions are entertained; and the affairs of *Ireland* that continual source of perplexity, occupy a large portion of legislative attention; very daring and bold attempts having been made in that part of his majesty's dominions to alienate the people, to disunite the government, and to set up a local legislature. How these great changes may operate, remains yet to be proved, but it is to be hoped, that the good sense of the people, since KNOWLEDGE IS ON THE INCREASE, will enable them to use discreetly that power of which the redemption of their rights has given them the possession.

THE GUIDE TO KNOWLEDGE

EDITED BY MR. W. PINNOCK.

AUTHOR OF "PINNOCK'S CATECHISM," "GRAMMAR OF GEOGRAPHY AND HISTORY," ETC., ETC.

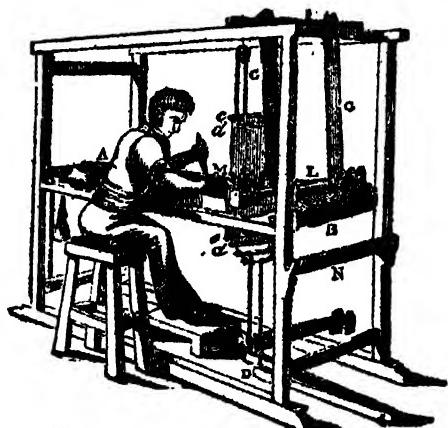
No. IX.

SATURDAY, AUGUST 25, 1832.

PRICE
ONE PENNY.

BRITISH MANUFACTURES.—No. II.

WEAVING.

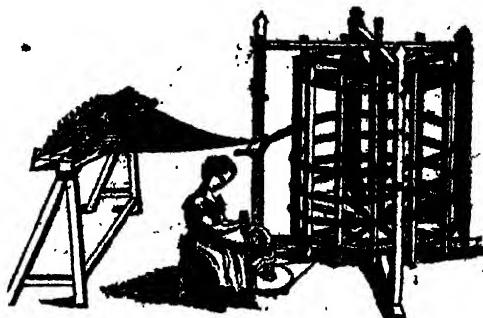


(The Loom.)

This is one of the staple manufactures of Great Britain, and it is highly interesting to trace the history of an art which has tended so materially towards our commercial prosperity.

Weaving is of great antiquity, even in this country, as a manufactory of woollen cloths was established by the Romans at Winchester, soon after their invasion of Britain. About six centuries later we find a curious allusion to the process of weaving, as practised by a bishop, who, in a treatise on "female purity," illustrates its beauty, and shows how necessary it is for other virtues to accompany chastity. "It is not," says the worthy ecclesiastic, "a web of one uniform colour and texture, without any variety of figures that pleaseth the eye and appeareth beautiful, but one that is woven by shuttles, filled with threads of purple and many other colours, flying from side to side, and forming a variety of figures and images in different compartments." Now this paragraph very accurately describes some of the most beautiful processes of figure weaving.

About the close of the eleventh century the arts connected with the manufacture of cloth had made a considerable degree of improvement, and the weavers in all the large towns were formed into guilds or corporations. The arts of spinning and weaving silk in a complete form were first brought over from France in the middle of the fifteenth century, and a company of females were established in London, called "silk women," who exclusively managed the business. But the great improvement in this branch of manufactures may be traced to the religious persecutions in France in 1686, when more than fifty thousand workmen of various descriptions took refuge in this country. In the latter part of the last century the invaluable invention of Sir Richard Arkwright introduced the very extensive manufacture of cotton, and added a large



(The Warping Machine.)

creative and elegant branch of traffic to the commerce of Britain. The light and fanciful department of the cotton manufacture has become in some measure the staple manufacture of Scotland, whilst the more substantial and durable cotton fabrics have given to England a manufacture inferior in importance and extent only to the woollen trade.

Having thus given a brief outline of the history of this branch of manufacture, we must now examine the process by which thin and delicate threads are woven and converted into cloth.

Weaving is performed by the aid of a machine called a loom, though this differs very much in its structure. A loom of the common form is shown on the left side of the accompanying engraving. The anonymous author of a treatise on the manufacture of silk, when speaking of this form of the loom, says, that simple as they are, they can yet be favourably contrasted with the rude contrivances still pursued in India, where the wretched weaver performs his labours in the open air, choosing his station under trees, whose shade may protect him from the scorching rays of the sun. Here extending the threads which compose the warp of his intended cloth lengthwise, between two bamboo rollers, which are fastened to the turf by wooden-pins, he digs a hole in the earth large enough to contain his legs when in a sitting posture; then, suspending to a branch of a tree the cords which are intended to

use the reciprocal raising and depressing of the alternate threads of his warp, he fixes underneath and connected with the cords two loops, into which inserting the great toe of either foot, he is ready to commence his operations. The shuttle wherewith he causes the cross threads or *woof* to interlace the *warp*, is in form like a netting-needle, and being somewhat longer than the breadth of the warp, is made to perform the office of a button, by striking the threads of the *woof* close up to each other.

With this rude apparatus, the patient Indian succeeds in weaving fabrics, which for delicacy of texture, cannot be surpassed, and can hardly be rivalled by the European weaver, even when his labours are aided by the most elaborate machinery. But it is only in climates where the absolute natural wants of men are few, and under systems of government where the oppressions of the dominant caste, deprive the unhappy bulk of the people of all means

for attaining more than suffices for the barest supply of those wants, that such labours can be so performed.

The art of weaving varies but little, whatever may be the material which is the subject of the manufacture. The principal difference discernible in the construction of looms intended for the weaving of silken or of woollen fabrics, consists in the greater strength and stability required for the latter machine, in consequence of the less delicate nature of the substance employed.

The simple loom ordinarily used in weaving plain silks, is represented at the head of the article, and may be thus described : A is the beam or yard-roll, on which the threads which form the warp are wound, and as the warping or winding the silk on the roller is a very important part of the process, it will be necessary to turn to the other portion of the weaver's shop, in which the apparatus is exhibited in operation. It consists of a tressel to support the bobbins which are arranged in rows, and each filament is carried through a perforated piece of wood, from whence the threads are conducted to the large cylindrical reel. A child seated on the stool gives motion to the handle, and as the roller revolves it carries with it a string which winds on the upper pivot. One end of this string is attached to the perforated piece of wood which is thus gradually raised, and with it the whole bundle of threads which thus assumes a spiral form. Having thus procured a sufficient quantity of single threads to form the warp, it is then passed through a sort of comb, and attached to the loom. B, is the cloth-beam or breast-roll, to which the ends of the warp are also attached, and on which the woven silk is wound when finished ; C is a weight attached to the frame of the loom, and suspended over the yarn-roll to produce, by the friction of its cord, the requisite tension of the threads of the warp ; D E are treadles, on which the weaver presses his feet alternately ; and as the treadle D is attached to the heddle d d, whilst the other treadle E is attached to the heddle e e, it will be evident that the depression of each treadle will correspondingly influence the position of its heddle. The two heddles, d d and e e, are each formed of two horizontal sticks, connected through the whole extent by numerous small cords of an equal length ; and the two heddles are so united by a rope and pulley, as shown in the engraving, that the depression of the one must cause the rising of the other. These heddles, which are commonly called the harness of the loom, are furnished with loops at the points where they will be intersected by the warp, each individual thread of which is passed, in regular succession, through the cords of one or other of the heddles, so that each alternate thread of the warp is passed through the loops of the one heddle, while the intermediate threads are passed through the cords of that one, and through the loops of the other heddles. It is now evident that the depression of the heddle d d by means of the treadle D, will cause the depression of all the threads of the warp which pass through its loops, and at the same time will raise the heddle e e, together with all the intermediate threads of the warp which pass through its loops, leaving between the two divisions of threads a space of about two inches, for the passage of the shuttle. A modern improvement substitutes for the loops small metallic eyes, through which the warp threads are passed, and by this means the wearing of the threads is in some measure avoided. The frame, F G G H, is called the batten, which is suspended by its bar F, from the upper framing of the loom in such a manner that it will swing to and fro as on a centre of motion. A shelf is formed by making the bottom bar H broader than the side rails G G, so that it projects about an inch and a half beyond them on the side furthest from the breast-roll. The ends of the shelf are prolonged by boards which form troughs or boxes in each of which is

placed a piece of wood or thick leather, called a picker, and these are made to traverse on small guide-wires fixed between the side rails G G, and the ends of the troughs. The pickers are united by a slack string fastened to each, and meeting at a common handle. I is the reed which is composed sometimes of small portions of split reeds or canes, but most frequently of flattened wires. These are fixed like the teeth of a comb in a frame which rests upon the shuttle-race H, and the threads of the warp are passed through the interstitial spaces of the reed. These are covered by a top-piece, having a longitudinal groove along its lower side, and which is called the lay-cap. M M, are cylindrical bars of wood made smooth, which are placed horizontally between the alternate threads of the warp to prevent their becoming by any means entangled. N, is the weaver's seat, and being hung by rounded ends, resting in corresponding brackets fixed to the framing, the position of this seat accommodates itself to the convenience of the weaver in the different movements of his labour. It must be lifted up when the weaver either takes or quits his seat at the loom, and can be readily replaced.

Having thus given our readers an account of plain weaving, we must briefly notice the fanciful and ornamental part of the business. Figures, or patterns, are produced in the loom by employing threads of different colours either in the warp or weft. By the proper use of these some colours may be concealed, or kept back, whilst others are thrown into the front of the fabric. These are made to change places at the will of the weaver, or, as in the case of the Jaccard loom, by the agency of machinery. In other cases, the same end is accomplished by employing two or three shuttles, with different-coloured threads, either of which may be introduced at pleasure.

Where open patterns are employed some slight modification of the machinery is found necessary, but while we now write, an account has appeared in the foreign scientific journals, and copied into Mr. Babbage's work, on the economy of manufactures, of an ingenious engineer on the continent having actually produced a species of cloth manufactured by the aid of a "caterpillar weaver." The following is the mode of proceeding adopted : Having made a paste of the leaves of the plant, on which the species of caterpillar he employs feeds, he spreads it thinly over a stone, or other flat substance of the required size. He then, with a camel-hair pencil dipped in oil, draws the pattern he wishes the insects to leave open. This stone is then placed in an inclined position, and a considerable number of the caterpillars are placed at the bottom. A peculiar species is chosen, which spins a strong web, and the animals commence at the bottom, eating and spinning their way up to the top, carefully avoiding every part touched by the oil, but devouring every other part of the paste. The extreme lightness of these veils, combined with some strength, is truly surprising. One of them, measuring twenty-six and a half inches by seventeen inches, weighed only 1.51 grain, a degree of lightness which will appear more strongly by contrast with other fabrics. One square yard of the substance of which these veils are made, weighs four grains and one-third, whilst one square yard of silk gauze weighs one hundred and thirty-seven grains, and one square yard of the finest patent net weighs two hundred and sixty-two grains and a half.

Some men value themselves upon their birth; in my opinion nothing but virtue confers nobility.—*Epistles of Phalaris.*

Curiosity about trifles is a mark of a little mind.

HISTORY OF ASTRONOMY.

(Continued from page 38.)

In the time of *Alexander the Great*, flourished the celebrated *Aristotle* and *Cathæsthenes*, both eminent astronomers; the latter of whom, by command of the king, made a distinct and accurate description of the countries under the dominion of that monarch by direct measurement, and observations of the correspondence of terrestrial objects, with the positions of the stars; thereby, rendering *Geography*, by means of its alliance with *Astronomy*, a real science.

Not was the cultivation of *Astronomy* confined to the *Greeks*. We learn from *Cæsar*, that the *Dœtines* diligently instructed their youth in what concerned the motion of the stars, and the extent of the *EARTH* and *HEAVENS*. *Pytheas*, an astronomer of *Marsilles*, urged by the wish of making discoveries in the science, sailed northwards, b. c. 380, until he reached an island, supposed to be *Iceland*, where, he affirmed, that in summer, the sun rose again almost immediately after it had set. This, which is now known to be fact, was ridiculed as fabulous by the philosophers of those days; and *Pytheas*, who appears to have possessed great learning and talents, was treated as a visionary; he discovered that the phenomena of the tides are connected with the motions of the moon, and that the *Polar Star* is not precisely at the Pole.

For want of a just idea of the *Solar System*, many phenomena of the planetary worlds were inexplicable to the ancients. Of these, their direct and retrograde motions, and their becoming at times apparently stationary, was no trifling difficulty. *Apollonius*, of *Perga*, endeavoured to explain this phenomenon by *cycles* and *epicycles*, or circles within circles; but this contrivance afforded by no means a satisfactory solution.

In *Alexandria*, that celebrated city of *Egypt*, founded by *Alexander*, a school for the cultivation of the sciences was established by *Ptolemy Philadelphus*; astronomy was assiduously attended to by the students, until its destruction by the *Arabs*, A. D. 642, after it had subsisted upwards of 900 years.

Vigorous endeavours were, from time to time, made to introduce the rational system of *Pythagoras*, but vulgar prejudices still prevailed. *Aristarchus of Samos*,* who flourished about three centuries before *Christ*, was one of these enlightened philosophers. B. C. 281, he observed the solstice, and proposed a method for determining the distances of the sun and moon. *Eratosthenes* of Cyrene,† who flourished a little later, was royal librarian to *Ptolemy Evergetes*, and constructed armillary spheres,‡ which were afterwards so successfully employed by *Hipparchus*, and others. *Archimedes* of *Syracuse*, so celebrated for his geometrical and mechanical skill, was likewise an eminent astronomer.

But none amongst all the ancient sages is to be compared with *Hipparchus* of Nice,|| in *Bithynia*, for astronomical discoveries and just views of that wonderful science, who wrote about 140 years, b. c. Although he entertained the erroneous idea that the Sun and planets moved round the *Earth* as their centre, he discovered that the time from the autumnal to the vernal equinox was seven days longer, than from the vernal to the autumnal. He formed tables for the equation of time, on the difference between real and apparent time, the latter being indicated by a sun-dial. He explained the different motions of the moon, and accomplished the difficult and

laborious task of making a catalogue of the stars, marking their distances, and showing the means whereby their precise places in the hemisphere of *Alexandria* might be known. He calculated likewise all the eclipses that were to happen for 600 years. As he makes no mention of *comets*, it is supposed, either that he never saw one, or that he considered them merely as meteors. *Hipparchus* is said likewise to have discovered the parallax of the heavenly bodies, or the difference of their situation as viewed from the centre of the *Earth*, and any point on its surface: this discovery has been of great importance to astronomy.

At *Rome*, this science was not neglected. *Pysidorius of Ampanis* in *Syria*, though he usually resided at *Rhôdes*, taught Astronomy occasionally in that metropolis; he was cotemporary with *Cicero* and *Pompey*, the former of whom speaks very highly of a celestial sphere constructed by him. About the same time *Cleomedes* wrote a treatise on the sphere, the motions, periods, distances, and magnitudes of the planets, and on Eclipses; and although he gathered all his knowledge from the writings of preceding Astronomers and from actual observation, his work is valuable, as preserving those writings and handing them down to us, which would otherwise have been lost. His opinions respecting refraction; the relative distances of the *Sun*, moon, and stars, and their magnitudes, approximate to the truth.

The Romans began early to understand the nature of Eclipses, and the method of calculating them, and thus they prevented the superstitious terrors which sometimes paralyzed the strength of armies where they happened; thus *Sulpitius Gallus* foretold the Eclipse which took place the night before the battle, in which, *Persicus*, King of *Macedon* was defeated by *Paulus Emilius*; it is probable that this event contributed to the victory; for the *Romans* being forewarned were not alarmed; whilst, it is probable, the phenomenon damped the courage of the enemy.

Nor did men of the highest rank, and whose ambition might have been supposed sufficient to occupy all their attention, neglect this science. *Julius Cæsar* studied it and reformed the *Calendar* of *Numa*. *Cicero* is said to have been a skilful Astronomer, and *Farro* was the first that made use of Eclipses to regulate Chronology.

In the reign of *Augustus*, *Caius Manilius* wrote a poem, entitled *Astronomicon*, which contains much that is valuable, but it is debited by the reveries of *Judicial Astrology*; and *Menelaus*, A. D. 50, assisted the science greatly by his discovery of the principal theories in spherical Trigonometry.

In general, however, the Romans paid little attention to Astronomy, and the science fell almost into desuetude, until the study of it was revived by *Ptolemy*, a native of *Ptolemais*, in *Egypt*, and a professor in the school of *Alexandria*, about A. D. 140. He collected, and reduced into a regular treatise, the substance of the writings on this subject then extant, and enlarged the work by observations of his own; this volume was called by the *Arabs*, *Almagest*, and by the *Greeks*, *Megala Syntaxis*, or the *Oteal Syntaxis*: it supports the erroneous opinion which still prevailed, that the *Earth* is the centre of the Universe, and endeavours to account for the phenomena of the heavenly bodies by means so complicated that they can with difficulty be understood, and so remote from the beautiful simplicity of nature, that it is astonishing it could have had any advocates among the wise and learned; it was, however, universally received, and so greatly admired, that, though by no means new, it was denominated the *Ptolemaic System*.

As we have already mentioned, the *Alexandrian school* was broken up, and its library destroyed, when the city was taken by

* A small island in the Mediterranean Sea.

† Cyrene, the capital of Cyrenaica, and one of the cities called *Pentapolis*, in Africa.

‡ An armillary sphere is composed of several brass circles, which represent those of the horizon, meridian, ecliptic, &c., drawn on the globe.

|| *Bithynia*, in *Asia Minor*, now *Asiatic Turkey*.

the **ARABS**, A. D. 642. The books were so numerous, that, though they were distributed among the 4000 public baths in the city, as fuel to heat them, it was six months before they were all consumed. The *Almagest*, of Ptolemy, escaped the general wreck, and was translated into *Arabic*, A. D. 827, and into *Latin* about 1350; the manuscript is said to be still extant, in the library of *All Souls College*, Oxford. Ptolemy wrote likewise a Geography, in which the situations of places are, for the first time, pointed out by their latitudes and longitudes.

A few years after the destruction of the Alexandrian library those very *Arabs*, who had committed such devastation amongst those valuable stores of learning, began to study such treatises on the sciences as had escaped the sad catastrophe; they paid particular attention to those that treated on *Astronomy*, and even some of the *Caliphs** became not only patrons of, but proficients in this interesting study. *HAROUN AL RASCHID*, who reigned in the latter end of the eighth, and the beginning of the ninth century, and makes so conspicuous a figure in many of the eastern tales, was a munificent patron of scientific men, and is said to have sent as a present to *CHARLEMAGNE*, a *clepsydra*, or water-clock, which pointed out the hours, by curious mechanical contrivances, which were then considered as an astonishing instance of ingenuity; but were probably, in reality, inferior to the common *cuckoo-clock* of the present day. *ALMANSON*, the son of *Haroun*, trod in his father's steps, and even went beyond him in his zeal for the promotion of useful knowledge. By his order the obliquity of the ecliptic was ascertained, but authors differ as to the result, and a degree of the meridian was measured on the plains of *Singia*, near the *Red Sea*. Thus, the *Arabs* merit praise, not only for having preserved the scattered relics of ancient learning, but for attempting to add to the stores of science by observations and discoveries of their own. Many of the works of the Arabian astronomers have been translated into *Latin*, and are still extant.

The *Persians*, the *Indians*, and the *Chinese*, attended early to the study of this science; the first-mentioned people fix the length of the solar year at three hundred and sixty-five days six hours; and to render this computation convenient, they dropped the six hours, and instead thereof, intercalated a month of thirty days once in one hundred and twenty years, which answered the same purpose as the extra day in our *bissextile*, or leap-year; this being at length found too much, *OMAR CHEYHAM*, an astronomer of that nation, improved the *calendar* by adding a day every fourth year, for seven periods of four years each, and then a day on the fifth year for the eighth period, and so on continually, which comes near the truth.

Even the barbarous *Tartar* princes patronized *ASTRONOMY*. *HOULAGON KHAN*, who conquered *Persia*, about 1264, built an observatory in the city of *Maragha*, and established a kind of college of astronomers, over whom he placed *Nassir Edlin*, as president. To this man the world is indebted for several astronomical works. *ULUGH BEG*, grandson of *TAMERLANE*, was a munificent patron of the science, and established an astronomical academy, at *Samarcand*, of which he himself became one of the members; it is said, that in this academy was a quadrant of one hundred and eighty feet radius, but so unwieldy an instrument must have been rather for show than use. *Ulugh Beg* published some works which are still extant, the chief of which was, a catalogue of the stars, and some astronomical tables, the most perfect then known in the East. Since this period *ASTRONOMY* has declined in *Persia*, and given place to astrological fancies, so that the modern *Persians* scarcely know how to make a rude calculation of an eclipse.

(To be continued.)

* *Caliph*, the sovereign of the *Saracens*, in whom was vested absolute authority in all matters relating both to religion and authority.

ORIGIN OF ERRORS.

L—DRAGONS.

"—There are said to be certain winged snakes about *Ethiopia*." —
ARISTOTLE.

All the old books on natural history contain marvellous accounts of what they call "DRAGONS;" and which they represent as abounding in all waste and outlandish places. They have never been seen, however, by any modern traveller! The following description from Aristotle will introduce them to the acquaintance of our readers:

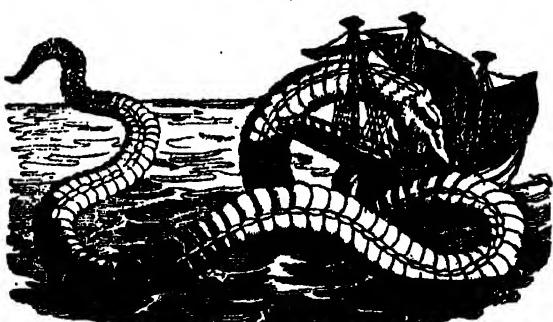
"*Ctesias* says, there is a certain savage animal in India, the name of which is *Martichora*, that has a TRIPLE ROW OF TEETH in each jaw. He adds, that this animal is EQUAL IN MAGNITUDE TO A LION; that it is similarly hairy with, and has FEET RESEMBLING THOSE OF A LION; but that its face and ears are like those of a man, and that its EYES ARE AZURE, and its COLOUR RESEMBLING THAT OF CINNABAR. It has also a TAIL ARMED WITH A STING, and resembling the tail of the land scorpion. It is likewise furnished with certain NATIVE DARTS, WHICH IT HURLS FORTH, and it utters a sound resembling that of a pipe and a trumpet. But it RUNS WITH NO LESS SWIFTNESS THAN THE STAG; AND IS SAVAGE, AND FEEDS ON HUMAN FLUSH."

Notwithstanding the authority of the great master of Alexander, we venture to affirm, that this description is as purely imaginary as the fact(?) which he also states, that, if a serpent's eyes be dug out they will shortly be reproduced; and, that the amputated tails of lizards are also similarly obliging. Succeeding writers followed worthily in this train of wonders, and beasts of all shapes and dispositions speedily decorated their pages. We have selected two for the public amusement. The first represents his majesty, the king of the Ethiopian Dragons, and the second, a Sea Serpent, breakfasting on a ship's crew; both of which have been drawn from Gesner's famous work on Natural History.

I.



II.



The imaginative faculty, thus set at liberty, having exhausted itself in devising odd shapes for its grotesque family, proceeded to invest them with human feelings; and hence have originated a great number of love stories, in which the dragons are represented carrying-off high-born dames, building sylvan palaces for their abode, and performing deeds of chivalric daring for their defence or amusement. It is honourable, however, to the present intelli-

gence of the times, to say, that every school-boy knows these dragon histories to be "cunningly devised fables;" which will, therefore, save the trouble of confutation, and leave us only the task of developing the cause which brought them into existence.

We consider that dragons are chimeras of the brain, thrown off from a heated fancy when under the influence of *EAR*. To make this evident, it will be necessary to define, in what fear consists, and then briefly to review its effects. Locke says, "Fear is an uneasiness of the mind, upon the thought of future evil likely to befall us;" and "COGAN on the PASSIONS," states fear to be "a painful sensation, produced by the immediate apprehension of some impending evil;" and Search, in his "Light of Nature," adds, that "when the nerves are weak, and extremely sensible, they fall presently into tremours, that throw the mind off the hinges, and cast a confusion over her." From these definitions we learn, therefore, that Fear predisposes the mind to false impressions; and hence we find Shakspere's Richard the Third, in the agonies of remorse, exclaiming,

O coward conscience! how dost thou afflict me!
The lights burn blue. Is it not dead midnight?
Cold, fearful drops stand on my trembling flesh.
What! do I fear myself? There's none else by.

In Richard's case, fear over-mastering the truth of his perceptions, caused the light apparently to "burn blue." Again, in "Smart's Odes," we find the same principle recognised :

And thrice he (Chanticleer) call'd aloud the tardy sun,
And thrice he hailed the dawn's ambiguous light;
Back to their graves the fear-begotten phantoms run.

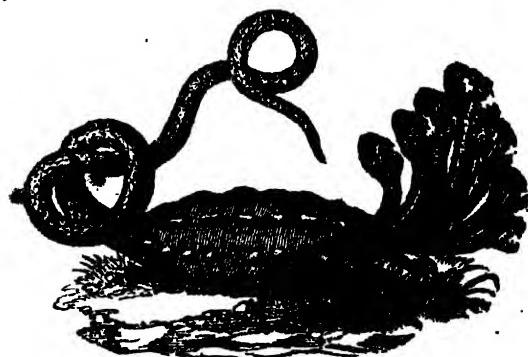
Now, it is our notion, that a dragon is nothing more than one of these fear-begotten phantoms; and we conceive that they might have originated thus: Suppose a man in those remote ages, when ignorance was the commonest misfortune, to be passing through the "ambiguous light" of a tropical forest; the dreariness of the place would excite his fears, and give a preternatural acuteness to his senses: suddenly, an immense serpent rises, in horrid abruptness, hissing from the bushes; the man starts—fear overcomes him—he is paralyzed for a moment, and his fascinated eyes, brimful of death, fix themselves immovably upon the slimy reptile, as he writhes in tortuous horror, previous to a fatal spring. Thus entranced, he stands for a moment, till, summoning his fleeting energies, he dashes with spasmodic violence from the scene—

Full fast he flies, and dares not look behind him,
Till, out of breath, he overtakes his fellows,
Who gather round, and wonder at the tale
Of horrid apparition, tall and ghastly—

The swift motions of the serpent half seen in the darkness, could not, surely, be accomplished without wings and feet? and wings and feet he accordingly gives him; saucer eyes, smoking jaws, roaring voice, and stinging tail, are finishing touches, which he adds in after narratives: for he continues, through life, to tell the tale to every new acquaintance, with the small addition, perhaps, of a desperate combat, fought by himself with the great, roaring, snooking, stinging, winged dragon. That this is not an exaggerated picture, we refer the reader to our extract from Aristotle, in which the "triple rows of teeth," "lion's feet," "blue eyes," "red skin," "stinging tail," "native darts," "swiftness," "savageness," and appetite for "human flesh," are all the lurid flashes of a mind insane through fear. It was, without doubt, as we have already intimated, that, from some such turbid sources, the ancient naturalists derived their descriptions; for we find that they always begin with, "It is said," "Ctesias says," "We have heard," &c.; but never, **WE HAVE SEEN.** These hearsay narratives have descended to our own times through a vast number of writers who *never thought for*

themselves, and who, usually being of a superstitious cast, took care, in their serpentine embellishments, that the world should not forget the philosophic fact, that a snowball rolling upon snow, enlarges as it descends.

We trust that we have thus clearly developed the ultimate cause to which the generation of "gorgons and hydras dire" may be traced; but the subject will not be complete without the useful demonstration, that error always increases our liability to imposition:—frauds are seldom committed on the intelligent. This axiom admits of an illustration very much to our present purpose. Many years since, an impostor in Germany manufactured a seven-headed dragon, and exhibited it to the *Learned* (?) as a real stuffed specimen. The existence of dragons being an article in the popular creed, it did not require a very great exertion of credulity to add "seven heads" to the specific description; and, thus the monster shortly became an object of *undoubted* wonder; and, after passing through many hands, it was at length deposited in the Museum at Hamburg, where it was valued at *seven thousand pounds!* Here it continued the "*lion*" of the place, attracting multitudes of visitors, and greatly enriching the tradesmen in its vicinity. At length, however, the illustrious Linnæus, who was then a young man, and on his first tour, arrived at the city; a sight of this strange beast at once convinced him that it was a vile manufacture of fish skins, birds' talons, canine teeth, straw, &c. The truth of this opinion he publicly demonstrated; but, instead of getting honour for his disabuse of the public mind, a riot was made by the tradespeople, who declared their bread in danger by his cursed doctrines, and accordingly he was shamefully driven from the city.



We have here given a faithful representation of the Hamburg dragon, from a plate drawn originally by Seba from the specimen itself.

Y.

SCHOOL DAYS.

Our thoughts revert to the days of childhood, as the travele looks round on the home which is fast receding from his view; and school days, with all their momentous troubles, become dear to our recollections. How many a lawyer, as he bears his purple bag sighs for the hours when he flourished his satchel;—how many a governor has found the rod he had to sway more abhorrent than the rod he once had to endure! We recall our sports and those who shared them, and envy the memory of our juvenile sorrows: mole-hills of calamity which, in after life, we exchange for mountains of misery. My school days were not very happy ones, and the epithet "unlicked cub" could not have been applied to me from the day of my entrance into Mr. Turvey's academy to my exit therefrom. I was always fond (as I believe every one is) of doing things in my own way.. My usher, Mr. Heartless, was no broker of innova-

Noris;—he had strong arguments (*argumentum baculinum*) in favour of old systems. He did every thing by rule, even to the castigation of his scholars; as both my head and hands could testify. He had a twist with the weapon of chastisement, that I never saw (nor felt) exceeded. What principally provoked him was my method of arithmeticizing; for, by some process that I could not account for then, and cannot recollect now, I learnt the art of my multiplication sums without setting down the ordinary work.—Twas in vain that he tried me with sums set expressly for me, I was invariably correct; except when I followed his method, and then I made a thousand blunders. However, Mr. H. persisted, and my talent for *improvisatorical* arithmetic was nipped in the bud. In writing, I assembled my four unhappy fingers and ill-fated thumb so close to the nib of the pen as to draw the ink on my nails, and his rule on my knuckles. In spelling, I had also a pleasing originality—*hart* for heart, and *plow* for plough, were standing favourites with me. Heigho! bad as the worst of those days were, they were better than the happiest I have since seen; and I sincerely exclaim with the poet “Would I were again a child!” Of all school days of which I have ever heard, those enjoyed by the scholars of St. Paul’s are the strangest. There *Suetonius* was Latinized—there *Elliston* studied, and cursed his “Greek Grammatices Rudimenta”;—and there have a hundred clever fellows been thumped into attention. In the year 1814, Dr. ROBERTS (now no more) was head master. He was a venerable-looking gent., clad in rusty black, with a hat to which Daniel Dancer’s thirteen-year-old one must have looked juvenile and fresh. He wore a broad steel watch-chain, six inches by four; and looked scarcely more lively than his bust, which, subscribed for by the boys, adorns the school-room. There, did he exercise his peculiarities, one of which was, to enter with his dress in that disorder that might, according to our new vagrant act, have consigned its wearer to Brixton for a month. When a noise occurred in the school, he invariably chastised the head boy of every class; a kind of practical lecture on the dangers ofeminence. The doctor had J—own notions, too, on the score of punishment; for he was wont to tie six canes together, to inflict that chastisement that could have been now forcibly inflicted with one. Another master was William Alexander Charles D——m, Esq. On his house door was a brass plate inscribed W. A. C. D——m; from which he obtained the appellation of *whack D——m*; and his *entrée* was always attended by the chorus of “whack row-de-dow.” In vain did he castigate or remonstrate; cane and casuistry alike failed of effect. We had taken it into our heads, and it could not be thrashed out of them. Even the gravest boys persisted; young Barber Beaumont, Taunton (the surgeon), and many more were principal altoes in this chorus. There was another species of rebellion which the conglomerated efforts of all the masters could not quell. This was the boys flinging their books at the head of any visiter entering with his hat on. They had no respect for persons or heavers, whoever entered the precincts of the school-room covered, was a mark for vengeance. Gradius, Juvenal, Persius, Aesop, and Xenophon, flew round him like hail; a strange way of hailing a visiter certainly. At Paul’s school the lowest, is called the first class, and the boys in it are termed the *single* boys; not that any of the others are married that I know of. Their day’s penance is really worth describing. In the first place (in 1814) we poor shivering wretches used to go at seven in the morning, with sixpenny taper in japanned boxes, and commence our studies with fingers below freezing point, there being no fires in the school at any time. At half-past seven, poor Dr. Roberts used to crawl in with a white chin, purple cheeks, and blue nose. He had a desk with back props opposite the pupil’s face: upon which props a duplicate of the lesson to be delivered

was usually placed by the attentive scholar. When this trick was impracticable, we used to puff out the doctor’s candles. Then would the reverend tutor, cut away indiscriminately in the dark; face, nose, or eyes, found no exceptions. At eight o’clock, A.M., one Mrs. Margery, a withered specimen of the fair sex, was let into the yard, with hot rolls, butter, and treacle; which she vended at the moderate price of three halfpence, and then, while our masticatory organs were employed, we thawed into a little comparative comfort. Whenever a new boy appeared among us, fight he must. Some of the bigger lads found him a suitable match, and on the first half holiday he was conducted to a place called “the Cockpit;” the very spot where the new post-office now stands, and there, with all the ceremonials of a regular fight (brandy bottle, lemon, and towel), did they set-to. These battles were upon the principle of martial education, for our school had its wars. The most deadly and fierce of these, was with Merchant Taylor’s School. I don’t know why, but when ever we met a Merchant Taylor, “whack he had it.” Sometimes six of us Pauls would meet three of those Taylors, in St. Thomas Apostle or other narrow nooks; and then woe betide them. But when the odds were reversed and we were beset by numbers, our agility in escaping was really wonderful. Under brewers’ drays, through warehouses; any thing to avoid the mohawking taylors, whom we denoumed as the vilest cowards upon earth, thus to set two upon one. Once (obliterate it from the chronicles of thy collegio, O Paul!) we disgraced ourselves by fighting with a charity-school; sparred with young gentlemen with marks on their breasts; wrestled with wearers of leathern unmentionables. These offsprings of charity, however, did not carry the precepts of their parent out of the school-room. Charity began and ended at home with them; they were at once the most furious and unmerciful of all our foemen, and were, I think, the first inventors of the system, which we afterwards pursued, of putting stones inside snowballs to make their effect more certain and severe. But of all things dear to recollection, the appositions at Easter are the dearest. Then did the elders brush up their scenes and sentences from Sophocles and Seneca; and their recollections of Demosthenes and Ferrarius. Those were the times for good memories and bold voices! The rewards, which in 1811 were valuable volumes bound in morocco, and embellished with the head of the master, dwindled down (in 1816) to plain sheepskin-covered commonplaces with neither head nor tail to them. *Sic transit gloria mundi!* Those days are past, and the giver of those volumes is in his grave; and though new tutors rise, and new pupils congregate, Paul’s school has, in my mind, ceased to exist. The new building has not the savour of an academy, and no more indicates a seat of learning than the new fret-work of Westminster Abbey agrees with the beautiful Gothic specimens that surround it.

When I consider the boundless activity of our minds, the remembrance we have of things past, our foresight of what is to come; when I reflect on the noble discoveries and vast improvements, by which those minds have advanced arts and sciences; I am entirely persuaded, and out of all doubt, that a nature which has in itself a fund of so many excellent things cannot possibly be mortal.—*Xenophon*, 400, B.C.

Happiness is the only thing of real value in existence; neither riches, nor power, nor wisdom, nor learning, nor strength, nor beauty, nor virtue, nor even life itself, being of any importance, but as they contribute to its production.—*Jenyns*.

BEGINNINGS OF KNOWLEDGE.—No. I.

To know
That which before us lies in daily life,
Is the prime wisdom.

MILTON.

MANY things which are very simple and have very little inviting in themselves, prove far more worthy of being known than those which come upon us like wonders, and take the eyes by storm. Then let us take the very first object.—There, I hear it, and hear it most offensively, before I see it,—

THE GRINDER AND HIS WHEEL.

Let us see if there is any knowledge in that, the sound of which is so very annoying, as the artist holds the bit of hoop against it, by way of calling the attention of the cook-maids.

How did it come? The grinder wheeled it along the path; and he was enabled to do so by means of that very same wheel which gives motion to his grinding stones. He slips off the leather belt, and lifts up the handles, so that the machine rests only on the wheel; then he puts the belt doubled across his shoulders, with a handle in the double of each end; and on he trundles, without much more labour than if he were walking.

The man is, in fact, quite a philosopher. If the wheel is three feet in diameter—that is in width from side to side, and the axle of it only half an inch, he pushes along his seventy-two pounds of a load, as easily as he would push two pounds along the ground at the end of a stick. Then if the centre of the weight is one foot from the centre of the wheel, and two feet from the handles in the loops of the belt, he carries only twenty-four pounds, and that he carries on his shoulders; so that his hands have little else to do than direct the way, and are unfatigued for work when he stops.

How does the push that he gives act upon the machine? In the same manner as if he were upsetting a stick three feet long by pushing it at the middle. And how does he turn out of the straight line? By lifting up, or advancing the handle, on the side opposite to that to which he wishes to turn. After the machine has been started, it acquires a motion, or *momentum*, as it is called, and would go a little way without any push at all; and, of course, the further, the faster he were wheeling it.

But the machine is now standing, and he is driving the wheel, holding the hoop against the grinding stone, and making a most disagreeable noise? The principle is still much the same. The wheel is now clear of the ground; the leather belt passes over it, and over the collet or small wheel on the axis or arbor of the grinding stone; there is a treddle below, connected with a crank or bent piece on the axle of the wheel. When he began, he brought the end of the crank near the top. Then, pressing down the treddle brought down the crank, and turned the wheel half way round. The motion it had acquired brought it up on the other side; a new tramp set it down again; and so the wheel trundles round and round.

What is his power in turning the wheel? The length of the crank. If that be long, the motion will be slower and more powerful; if short, it will be quicker and less powerful than in making the wheel that can be easily regulated.

What is the relative motion of the grinding stones? If the wheel is three feet, and the collet half a foot, the stones will move six times as fast as the wheel, and will act with six times the force upon every thing applied to them. Small stones are not, however, the most powerful, because the weight of the stone must be taken into the account; but if there are several stones fixed to the same axle, the small ones will be most powerful, as the large ones acquire momentum as fly wheels.

Where is the machine most easily stopped? On the large wheel—the hand may be placed on that and stop it, when the motion of the small stones is so rapid, that if the hand were applied to them, it would be ground to the bones.

But the man applies the hoop to the large stone in order to make the noise; and there are sparks of fire produced at the same time? The noise is a curious matter, for the very same bit of hoop might have been made into the strings of a musical instrument, and have given out sounds as delightful as those produced by the grinder are grating. The sparks of fire, the sharpening of the knife, and all the operations of the “needy knife grinder,” have really more of philosophy in them than many books of philosophy.

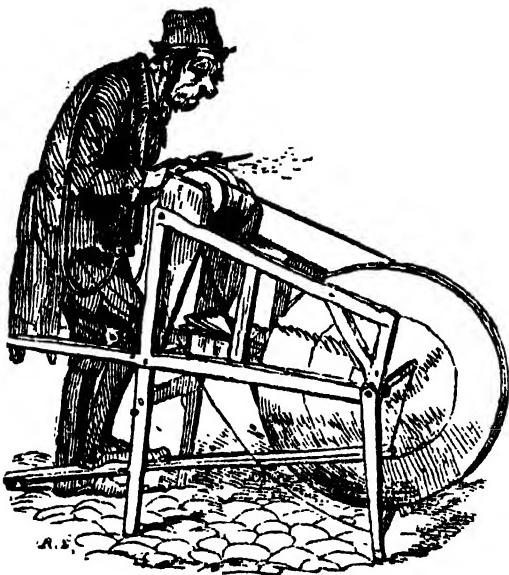
Sound is produced by the vibration of bodies, so that different parts of them strike the air with different velocities, or degrees of motion; and the sound may be produced either by the body striking the air, or, by the air striking the body. Air against air will make loud sounds, as in the case of thunder. But air will not put a perfectly smooth body into a state of vibration so as to produce sound. A smooth cannon-ball flies in silence, and so does an unfeathered arrow that flies straight; but a ball honey-combed, or with holes in its surface, or an arrow that is feathered, or that wriggles, sings as it flies. Birds that fly along with steady wing make no noise; but when they flutter they do, as the different parts of their wings strike the air with different velocities. Down and soft fur make little noise. Owls and cats move in comparative silence.

If the vibration be uniform, so as that a curve is produced, the sound is clear; but, if the vibration be irregular, the sound is harsh; and if the vibration be stopped by another motion given to the body the sound will be stopped also. When the sides of the *epiglottis*, or organ of voice in human beings are so thickened by inflammation, that the one side touches the other, before the sound can be properly formed, hoarseness is the result. The same effect is produced by long and loud speaking.

The tongue, palate, teeth, and lips are not the organs that produce noise, they merely modify it,—as the sound produced at the mouth-hole of a flute, or by the reed of a clarionet, is modified by the stops and keys.

The grinder prefers the iron hoop to a piece of steel for his noise, because the stone takes a hold of it more easily, just as the air takes hold of a chink more easily, and makes it sound, in damp weather more than in dry. The dry timber and the hard steel, would produce finer and louder sounds than the moist wood and the soft iron; but they could not be produced so easily.

The grinder prefers the rough stone for his noise, just because it is rough—because the hard grains or particles of it, which throw the hoop into vibrations, are so far asunder as that each has time to produce a sound before it is stopped by the next. The edge of the hoop is preferred to the flat side, because it vibrates more easily; and therefore each vibration is louder, but still they are too rapid in their succession for being distinct, and consequently for being agreeable. Whetting a scythe, which is done with a very rough stone, wheeling a barrow over the little flints on the footpath, drawing a wet slate along a sanded pavement, crushing a cinder under the foot, the creaking of ungreased carriages, and all those other offensive noises, that are so disagreeable to delicate ears, are produced in the same way. They are all successions of sounds, too close for being distinct, and yet too open for being heard as one. Upon a similar principle, it is possible to apply the bow so near to one end of a string of the finest violin, as that the sound, instead of a musical note, shall be a most offensive and ear-piercing screech.



When the rate of motion is so much increased as that the ear barely feels the intervals, the sound is not so disagreeable; and though no speed could bring music out of an iron hoop and a gritstone, the sound may be rendered much more tolerable, as we find it becomes when the grinder leaves off his "call-noise" and begins to work.

When the grinder applies the knife lengthwise to the stone, the sound is less grating than when it is across; the sound of a thick knife is less grating than that of a thin one; and the back of the knife does not sound so harshly as the side of it. In all these cases the vibration is lessened; and in the case of hard steel on a smooth stone turned with great velocity, the noise is comparatively small. Water lessens it, by confining in the hollows the loosened particles both of the stone and the iron. The points of contact are by that means multiplied, and the action at each is less. Oil has a much greater effect in that way than water; and when the oil is reduced to a certain degree of toughness, there is hardly any noise or any action at all.

Dry grinding is, therefore, the most effective. But it is so only up to a certain point, which depends on the nature of the stone, the hardness of the thing ground, and the rate of motion. Beyond that point, the dry stone becomes covered with a coating of iron; and after that has been brought on, the stone "loses its tooth," and will grind no more, until the coating be removed. When the stone is wet, and especially when it turns round with one edge in water, the iron does not adhere; it decomposes a part of the water, becomes an oxide or rust, and is washed off. Dry grinding, when long continued, softens the iron, and therefore tools that require to have their temper preserved, should be ground wet. There is, however, always a degree of roughness in water grinding, because the tooth of the stone is always kept sharp. The stones that answer best for the finer kinds of water grinding or sharpening are clay-stones, because clay forms a readier and finer paste with water than any other of the earths. The stone called "water-of-ayr" stone, among workmen, sharpens ordinary tools very well with water; but that and all the clay-stones have little effect when dry. Stones that are flint, or lime and flint, answer better with oil; but the oil must not be too thick, otherwise the article slides on the stone, like a wheel on a greased axle, and little effect is produced.

There is a curious sympathy between the ear and the eye in the case of the grinding-stone in motion. When the motion is so rapid that the sense of sound to the ear is almost continuous, the motion to the eye becomes nearly the same as rest. At the great manufactories of cutlery, the dry grinding-stones move so fast that the touch of them would cut to the bone in an instant, and yet to an observer they seem to be standing still. The reason is, that there is nothing to point out change of position. For the same reason a disk of wood painted like the colours of the rainbow appears perfectly white when made to whirl round with sufficient rapidity; and if it be painted in the parts of any compound colour, it will show that colour uniformly over its whole extent. Thus, yellow and blue will give a green; and by changing the proportions of these colours, the green may be of any shade, from almost yellow to almost blue.

The sparks that fly from the wheel in the act of grinding are little bits of the iron set on fire; so that, at the points where they are struck off, there must be a degree of heat equal to that at which iron kindles, that is, at the white heat of a smith's forge. A consumption of air, or of the oxygen of the air, always takes place in these cases; and the spark as it flies along burns the air, that is, expels heat from it, as it enters into a solid with the iron. In common air, the heated or burning iron soon goes out; but in pure oxygen it continues to burn like a candle; or if water be decomposed into oxygen and hydrogen by any means, such as that of galvanism, the oxygen supplied is sufficient to burn the iron. Flint against flint, ice against ice, air against air, or perhaps any substance against any other substance, if made to strike with sufficient rapidity, would produce heat and the appearance of flame in the same way; but there are comparatively few substances that will produce a spark so energetic and continuous as to kindle any but the most inflammable substances, at least with any degree of motion that can be conveniently applied. Some of the fungi, or toad-stools, that grow on trees, are very inflammable, and air driven forcibly against them through a small hole will set them on fire. Dry sticks kindle by rubbing; a rod of iron may be hammered till it is red-hot; and there are some powders made by chemists, which a stroke, or even the least rubbing, will set on fire, and even blow up with a terrible explosion, nor are we by any means certain that lightnings, and earthquakes, and volcanoes, are not owing to very rapid motions, in substances from which such effects would be little expected.

WISDOM OF THE CREATOR EXEMPLIFIED IN HIS WORKS.

The various orders of vegetables provided in every part of the globe, for the countless forms of animated existence, are eminently illustrative of the provident care of the Creator, and show us how good and how great is the Father of the families of the whole earth. The following passage from St. Pierre's Studies of Nature, is so well calculated to impress this truth, that it is unnecessary to apologise for its introduction: "The sluggish cow pastures in the cavity of the valley; the bounding sheep on the declivity of the hill, the scrabbling goat browses among the shrubs of the rock; the duck feeds on the water-plants of the river; the hen, with attentive eye, picks up every grain that is scattered and lost in the field; the pigeon, of rapid wing, collects a similar tribute from the refuse of the grove; and the frugal bee turns to account even the small dust on the flower. There is no corner of the earth where the whole vegetable crop may not be reaped. These plants which are rejected by one are a delicacy to another, and even among the funny tribes, contribute to their fatness. The hog devours the horse-tail and hembane; the goat, the thistle and the hemlock. All return in the evening to the habitation of man, with murmurs, with bleatings, with cries of joy, bringing back to him the delicious tributes of innumerable plants, transformed, by a process the most inconceivable, into honey, milk, butter, eggs, and cream."

THE
GUIDE TO KNOWLEDGE.
EDITED BY MR. W. PINNOCK.

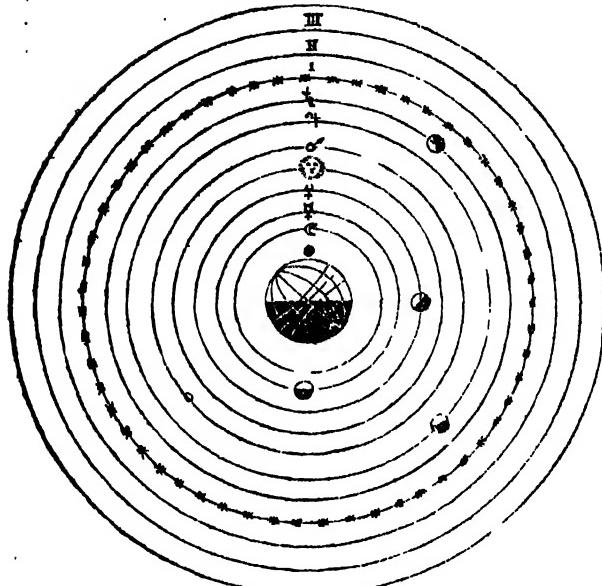
AUTHOR OF "PINNOCK'S CATECHISM," "GRAMMAR OF GEOGRAPHY AND HISTORY," ETC., ETC.

No. X.

SATURDAY, SEPTEMBER 1, 1832.

PRICE
ONE PENNY.

OF THE SEVERAL ASTRONOMICAL SYSTEMS OF THE WORLD.



PTOLEMAIC SYSTEM OF THE UNIVERSE.

- ⊕ The Earth
- ⊖ The Moon
- ☿ Mercury
- ♀ Venus
- ☉ Sun > in their orbits round the earth.
- ♂ Mars
- ♃ Jupiter
- ♄ Saturn
- I. Firmament of Stars.
- II. First Crystaline Heaven.
- III. Second Crystaline Heaven.

Around these concentric orbs and spheres, the "Primum Mobile," or great first mover, was said to reside.

By the term "System" is meant an Hypothesis, or supposition of a certain order, and arrangement of the several parts of the "Universe," by which astronomers explain all the phenomena or appearances of the heavenly bodies, their motions, changes, &c.

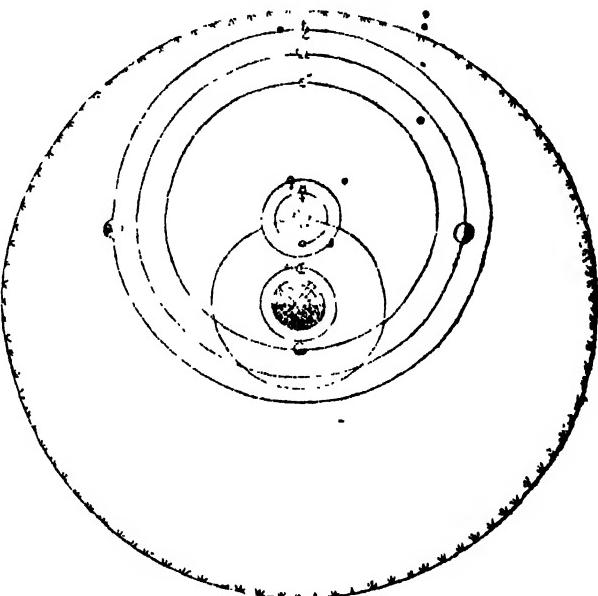
The most celebrated Systems or Hypotheses, are the *Ptolemaic*, the *Tychonic* or *Brahean*, and the *Pythagorean* or *Copernican*.

The most ancient of these was that taught by *Ptolemy*, a celebrated astronomer of Pelusium, in Egypt, who flourished about 138 b.c. The next, in order of time, was, that of *Tycho Brahe*, a noble Dane, who was born at Schonen, a.d. 1546.

THE PTOLEMAIC SYSTEM.

THE PTOLEMAIC SYSTEM supposes the *Earth* to be immovably fixed in the centre of the Universe, and that all the hea-

* Hypothesis is a system formed on some principle not used, and laid down from the imagination, to account for some phenomena; a supposition



TYCHONIC SYSTEM OF THE UNIVERSE.

- The Earth in the centre
- ⊖ The Moon } in their orbits round the earth.
- ☉ The Sun } in their orbits round the sun.
- ☿ Mercury } in their orbits round the sun.
- ♀ Venus }
- ♂ Mars }
- ♃ Jupiter }
- ♄ Saturn }
- * * * Firmament of Fixed Stars.

venly bodies move round it from east to west once in 24 hours, in the following order:—

The Moon, Mercury, Venus, the Sun, Mars, Jupiter, Saturn, and the fixed stars: all these Orbs were supposed to be fixed in a solid transparent sphere like crystal, and to be included in another, called the "Primum Mobile," which gives motion to all the rest.

This System owes its origin to the sensible appearance of the celestial bodies. It was taken for granted, that the motions which these bodies appeared to possess were real; and, not considering of any motion in the *Earth*, nor being acquainted with the distinctions between absolute, relative, or apparent motion, the philosophers of those days were incapable of forming any idea of these particulars; they were, in consequence, misled by their own senses, for want of that consistence which after ages produced.

It is readily perceived, that they had no notion of any other System than our own, nor of any other World than the Earth on

which we live. They were persuaded that all things were made for the use of man; that all the stars were contained in one concave sphere; and, consequently, at an equal distance from the Earth; and that the "Primum Mobile" was circumscribed by the *Cælum Empyrium*, or *Heaven of Heavens*, of a cubic form which they supposed the blissful abode of departed spirits. But modern observations and discoveries have sufficiently shown the absurdity of this system, hence it is now entirely abandoned by all the learned, and is only noticed here to shew the progress of knowledge. *Ptolemy's System* was published A.D. 140, and continued in high esteem, for upwards of a thousand years: it gave way to that of TYCHO BRAHE.

OF THE TYCHONIC SYSTEM.

TYCHO BRAHE, who flourished in the latter end of the sixteenth century, conceiving that the *Ptolemaic System* could not be true, contrived another, different from every thing before offered to the world.

In this hypothesis, the earth is supposed to be at rest in the universe; and that the sun, together with the planets and fixed stars revolve about the earth in twenty-four hours; and, at the same time, all the planets, except the moon, revolve about the sun.

But this system was even more absurd than that of *Ptolemy*, and, consequently, was soon exploded; and was followed by the only true and rational system, rest ed by COPERNICUS. The systems of *Ptolemy* and *Tycho* (the are represented above, that of *Copernicus* in page 17.

Although *Tycho Brahe* was not happy in establishing a new system, he was yet of very great use in astronomy, by his diligence and exactness in making observations, for a long series of years. Amongst other things, he discovered the refraction of the air, and determined the places of a great number of the fixed stars, with an accuracy unknown to the astronomers of former times. In consequence of these, and of other discoveries which he made in *Astronomy*, he will always be celebrated and esteemed by astronomers.†

* The *Primum Mobile*, a term in the old astronomy, was the ninth, or outer sphere, within which were included the firmament of fixed stars, and also the orbits of the planets, and which it hurried from west to east in 24 hours; and this Heaven was only discovered by its motion, having neither fire nor any other character in it. This wild idea, however, has long since been exploded, although the term is still retained, and implies the principle or moving cause of any and every thing.

† It was about the middle of the same century that *Tycho* flourished that *Copernicus* adopted and revived the *Pythagorean*, or "True System of the Universe," and published it to the world in the year 1530, with many new and demonstrative arguments in its favour, but at that time, the inhabitants of Europe had not emerged from gothic barbarism, and were incapable of understanding, and, consequently, of receiving, the sublime demonstrations of *Astronomy*. Hence, it was, that the superior learning, and just conceptions of *Copernicus* were doomed to give way to the crude ideas of *Tycho Brahe*, whose errors were not made known till the time of those great astronomers, *Galileo* and *Kepler*, who flourished towards the close of the sixteenth, and about the beginning of the seventeenth, century: in whose time was discovered the invention of the telescope, by means of which many new and surprising discoveries in the heavens were made. From these discoveries, astronomy began to assume a new form, and most of the celestial phenomena were soon accounted for, according to their real or physical causes. But, of all the discoveries and improvements that have been made in astronomy, those of *SIR ISAAC NEWTON* are of the greatest importance, by which he has established the "Copernican System," upon such an everlasting basis of mathematical demonstrations, as can never be shaken, but must last as long as the present frame of nature continues in existence. One of the most celebrated astronomers before the time of *Newton*, was *KEPLER*, who may be considered as the first founder of modern astronomy; for by his own talents and industry, he made discoveries, of which no traces are to be found in all the annals of antiquity. But, it must not be forgotten that *Copernicus* was the first who seized and dashed to pieces the circles and crystal orbs of *Ptolemy*, and sent the

The only other Systems worth mentioning, besides those already noticed, are the *Semi-Tychonic* and the *Cartesian*, both of which have gained proselytes; though neither of them, including the *Tychonic*, was ever so universally received as the *Ptolemaic* and *Copernican*.

The SEMI-TYCHONIC SYSTEM* supposed the planets to revolve round the *Sun*, while the *Sun* and *Moon* revolve about the *Earth* as their centre of motion; and it supposed the *Earth* to move about its axis from west to east in twenty-four hours. This System differs from the *Tychonic* only in this, that it supposes a diurnal motion in the *Earth*, but, like the *Tychonic*, denies an annual one.

THE CARTESIAN SYSTEM, so named from its author DES CARTES, supposes a variety of vortices or whirlpools, in which the motions of the heavenly bodies are performed, being carried round the *Sun* of ethereal matter, in different times, proportioned to their distances; and, each planet having also a particular vortex of its own, in which the motion of its satellites are performed. From the laws of motion, however, it will readily appear, that the irregular motions of the planets cannot be accounted for by these vortices; and, besides, the *supposition* of an ethereal matter, to perform the operations, is without any foundation, or *analogoy* in NATURE.

But while philosophers were divided between the *Ptolemaic*, the *Tychonic*, the *Cartesian*, and *Copernican Systems*, *SIR ISAAC NEWTON* laid down the laws of nature and motion; and, comparing all the phenomena in the *Heavens*, found out the "True System of the Universe," confirmed the *Copernican System* of Astronomy, and demonstrated, by unanswerable arguments, that it could not possibly be otherwise, without the utter subversion of all the laws of nature. This system, which is founded on the *Laws of Nature*, and true mechanical principles, is represented in the engraving at page 17.

The *SUN* is placed nearly in the centre of the orbits of all the planets, and in those orbits they move round the *sun*, each in its periodical time. The *sun* keeps always in or near the same place, but has a central motion on his own axis, from east to west, once in twenty-five days and a half, which is evident from the *maculae*, or spots on his disk, which are always observed to move in the same manner; but, having no circular motion he can have no orbit.

The orbits of all the planets are nearly circular, having the *sun* for their centre; but, in strictness, they are ellipses, having the *sun* in the focus of each of them. These orbits are not all of them in one plane, and yet do not vary a great deal; they intersect one another in lines that pass through the centre of the *sun*; the places of the orbits where they intersect, are called the *Nodes*. All the

unwieldy *Earth* far from the centre of the System, to move round the *Sun* with the rest of the planets; so that of all the celestial equipage, with which she had been formerly dignified, there remained only the *Moon* to attend and accompany her in her journey.

* This system received its name from its being based upon that of *Tycho Brahe*, which was altered and improved by *Longomontanus* and others.

† *Analogy* signifies the resemblance which one thing bears to another in some of its properties or qualities, though not in all. When we speak to or of the Divine Being, we are obliged to have recourse to this method of expressing ourselves, because divine matters are not the objects of our senses, and cannot be conceived in any other way, than by their similitude, proportion, or connection with sensible things; so that *analogy* means resemblance in kind or sort, but a difference with respect to manner. Among *Geometrians* it denotes a similitude of ratios. In *Medicine*, it is the similitude observable among several diseases, which, accordingly, are treated in nearly the same manner. By *Grammarians*, it is used to signify the agreement of several words in one common mode; as, *love, loved; hate, hated*. In *Rhetorics*, it is a figure of speech, otherwise called comparison.

planets move round the sun in the same way, which is from west to east, and are called *primary planets*. Their names and order are represented and given in pages 17 and 18. Four of the planets have others revolving about them, which likewise revolve from east to west: these are called *secondary planets* or *satellites*.

Besides the planets and their satellites, there is another sort of bodies revolving about the sun, which only appear at particular times. These are the *COMETS*, which move in elliptic, in various directions round the sun; some the same way as the planets, and some the contrary way: they cut the plane of the sun's orbit in all sorts of angles, some greater, and some less.

Some of these bodies are several hundred years in making a revolution; and, therefore, the periodical times of but a few of them are known. Nor can their number be determined; for want of a proper series of observations. The whole list of comets upon record, that have been noticed, is about 450, some of which are those that have re-appeared. They are distinguished from other stars by a luminous streak of light which they emit, called the tail, when they come near the sun. The tail is nothing more than a very slender vapour emitted from the head, or nucleus* of the Comet, and which is ignited by the heat of the sun.

In order that we may remove every impediment from astronomical pursuits, we shall hereafter give a more particular account of the planets; beginning first with the Sun, the centre of the whole.

ON THE ORIGIN OF NATIONS.

FIRST OF BABYLONIA, OR BABYLON; ASSYRIA, EGYPT, GREECE, ETC. ETC.

BABYLON, the first settled kingdom mentioned in Scripture, was founded by **NIMROD**, a grandson of Noah, n.c. 2230. The second kingdom mentioned was the **ASSYRIAN**, founded by **ASSUR**, a son of **Shem**, who left the land of Shinar, and built **Assur**, or **Nineveh**. Those two kingdoms continued separate and distinct for some time, though they afterwards were united into one. From **Moses** we learn, that **NIMROD** not only built **Babylon**, but three other cities, viz. **Erech**, **Accad**, and **Cuthah**; the situations of which are not now known.

This country was originally known by the name of **Shinar**; but in later times, the country immediately round the city itself, was called **Babylonia**, or **Bahylon**, and that part of it which extended southward, **CHALDEA**.

It was bounded on the north by **Assyria** and **Media**, on the west by **Arabia**, on the east by the country now called **Persia**, and on the south by the **Persian Gulf**.

Although these kingdoms were founded so near the time of the Deluge, we have no further accounts concerning them till several centuries after. The countries were, indeed, at that time, very thin of people; the descendants of Noah were dispersed according to their several languages and families; and, therefore, few transactions worth recording happened in the world.

Perhaps, the simplicity, softness, and effeminacy, of the first inhabitants of these fertile parts of the earth, greatly contributed to occasion this blank in the annals of mankind. Wars and commotions are the favourite themes of the historian, while the gentle and happy reigns of wise princes pass away unnoticed and unrecorded.

BELUS is the first king of **Babylon**, after **Nimrod**, of whom we have any account in history. He greatly enlarged the city of Babylon, and encompassed it with walls. He also finished the celebrated **Tower of Babel** (A.D. 2233), which was afterwards used for an *Observatory*; and where, it is supposed, the first celestial observations were made, which the **CHALDEANS** ascribed to **Belus**, whom they considered as the author of the science of *Astrology*.

A still more considerable blank occurs in the history of the **Assyrian monarchy**. **Assur**, as before observed, was the founder, but **NINUS** is the first prince of whose actions we have any account. He was a great and warlike prince; hence he became famous in history, n.c. 2016. Warmed with ambition, and envies

of arms, and fitted them to martial exercises and dangers.

War and desolation now laid waste the fertile provinces of **Assyria**, and a bad period was put to the peace which had hitherto prevailed amongst the nations. He added **BABYLON** to his dominions, and laid the foundation of a mighty empire, which, for many ages, extended the yoke of slavery over the greater part of **Asia**.

Ever still flourished in tranquillity. **Hammurabi** had led a colony thither soon after the dispersion of **Shudra**; and it is plain, from the writings of **Moses**, that **Abraham**, who lived in the time of **NINUS**, and was obliged, by a general famine, to retire out of **Canaan** into **EGYPT**, found that kingdom in the zenith of power. The monarch was surrounded by a train of courtiers; the people were governed by **Laws**; had abandoned a wandering life, and were settled in cities. It was full of people; the rudiments of the arts were known; structures, for elegance as well as use, were erected in various parts of the empire, and a commerce far from inconsiderable, was carried on by the descendants of **Hammurabi**.

JAVAN, the son of **JAPHE**, and grandson of **Noah**, led his colony into **ASIA MINOR**, and established himself in the islands on the western coast of the continent. As their numbers increased they extended their settlements; many of them passed over into **EGYPT**; and part of **GREECE** became peopled in very early times. But as there was still room sufficient for others, and the country very fertile, a colony from **Egypt**, known in history by the name of **TITANIS**, penetrated into **Greece**, and established the *polity* and *arts* of their country.

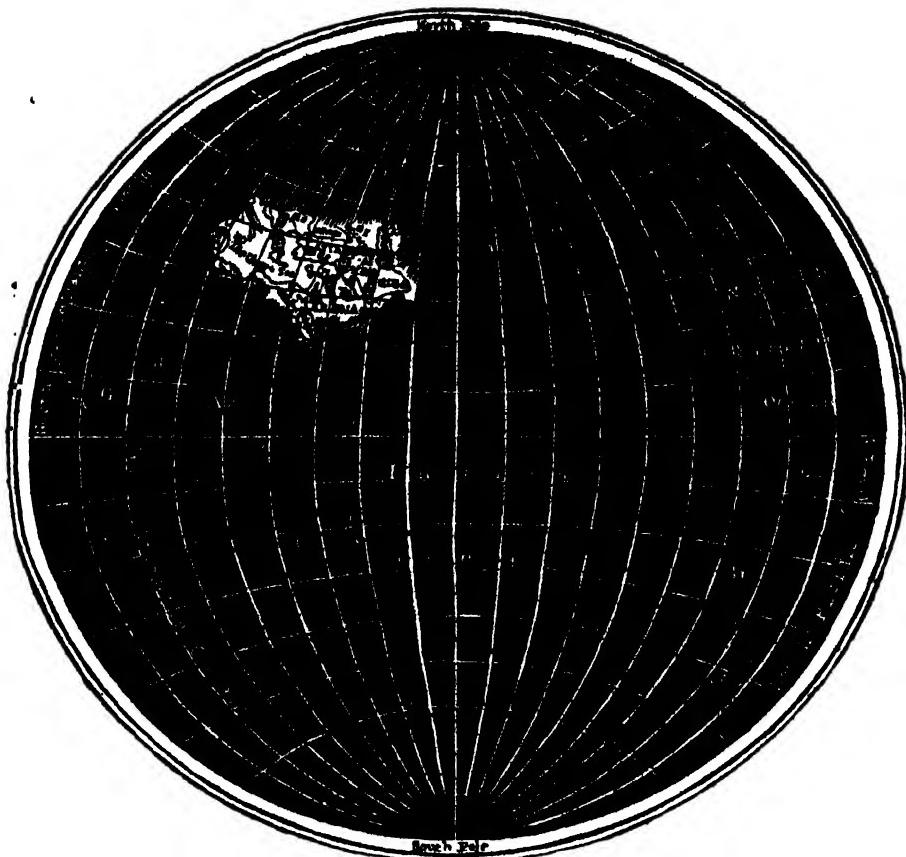
Internal jars and commotions, however, stopped the progress of improvement: wars succeeded, and soon demolished the *Titani* kingdom. The descendants of **Javan**, before the arrival of the **Titans**, were rude and barbarous; they inhabited dens and caverns like wild beasts; the reasoning faculty was debased, and hardly any thing but the form remained to distinguish them from the brute creation. The little progress they had made under the *Titani* government was soon forgotten; and when the colonies, headed by **Ogyges** and **INARCIUS**, arrived in that country, the inhabitants had relapsed into their former state of barbarity (n.c. 1619).

INARCIUS exerted all his power to collect the wandering Greeks, and form them into a regular society. He succeeded in some measure: but the histories of those times are so dark and confused, that it is impossible to withdraw the veil of obscurity, or advance any thing certain on this subject.

The only history on which we can rely, with regard to the transactions of these early ages, is that of **Moses**. The sacred writer, in giving an account of the settlement of the family of **Jacob** in **Egypt** (n.c. 1808), has given us a series of very remarkable events, which need not be mentioned here, as they are universally known.

* The term *nucleus*, in astronomy, signifies the *body* of a comet, by some called its *head*, in contradistinction to its *tail*.

EASTERN HEMISPHERE.



GEOGRAPHY AND HISTORY OF THE WORLD.

KEY TO MAP.

A 1 Ararat, Mt	E Euphrates, R	P 1 Phrygia
A 2 Alba	H 1 Hiddekel, R	P 2 Phoenicia
B 1 Babylonia	H 2 Horob, Mt	R Roma
B 2 Babylon	H 3 Hoemus, Mt	S Sidon
C 1 Caucasus, Mts	I Israel	T 1 Tyre
C 2 Cilicia	J Judah	T 2 Troja
C 3 Carthage	L Lydia	T 3 Taurus, Mts
	N Ninevch	

FROM THE TIME OF THE ISRAELITES* GOING OUT OF EGYPT, B. C. 1491, TO THE FOUNDATION OF ROME, B. C. 753.

THE principal countries of the World, as known to the ancients from B. C. 1491, to B. C. 753, were *Assyria*, or *Babylonia*; *Mesopotamia*, *Armenia*, *Media*, the Land of *Judah* and *Israel*, *Egypt*, *Asia Minor*, *Syria*, *Phoenicia*, *Greece*, *Italy*, and *Carthage*, all of which are represented in the light part of the above map; but the black, or darkened parts, in this period, were unknown.

The ASSYRIAN EMPIRE comprised *Assyria Proper*, *Mesopotamia*, and *Media*.

ARMENIA is a name both in ancient and modern geography, and comprises the northern part of Asiatic Turkey. Its most ancient name is supposed to have been derived from *Aram*, the original name of *Syria*; but the Greeks derived it from *ARMONUS*, one of

the Argonauts who settled in the country. Armenia has *Mesopotamia* on its south, and *Media* on its east.

In this country are the sources of the four rivers mentioned by Moses; viz. the *Euphrates*, the *Tigris*, the *Pison*, and *Gihon*, which flowed by the *Garden of Eden*. (See Gen., c. ii, and Map, p. 1). There is no doubt respecting the two first, and the two latter are mentioned by those celebrated ancient historians, *Herodotus* and *Xenophon*. The two rivers, now called *Araxes* and *Phasis*, are supposed to be the *Gihon* and *Pison*. In this country, also, is *Mount Ararat*, upon which Noah's ark is said to have rested after the Universal Deluge. (See p. 27).

Armenia was anciently divided into *Major* and *Minor*, or the Greater and Lesser. Its boundaries, however, have been different at different periods. According to *Strabo*, Armenia Proper was bounded on the north by *Mount Caucasus*, and on the south by *Mount Taurus*, which divided it from Mesopotamia. The natural features of this country are highly delightful, and very picturesque. The most considerable cities of ancient Armenia were, *Artaxata*, *Sebastia*, *Armosata*, *Colonia*, &c.

*Erratum.—For the head of the Chapter in page 27, read, "From the Beluge to the Departure of the Israelites out of Egypt."

The ancient Armenians were, for the most part, a pastoral people, living chiefly in open villages, or in caverns in the mountains, and maintaining themselves chiefly by the produce of their flocks and herds, as their successors, the Kurds do at the present day. Their government was patriarchal.* (*Xenophon*). They sent wine down the Euphrates to Babylon, (*Herodotus*), and likewise furnished Tyre and the trading towns in the Mediterranean with horses and mules. (*Ezekiel*, chap. xxvii. 14).

The ancient Armenians were greatly distinguished for their courage and enterprise; but the moderns are chiefly noted for trade and commerce, by whom a large portion of Asiatic Turkey is inhabited. They also form the chief class of traders in the Persian empire.

MESOPOTAMIA was that part now called Diarbeck, in Turkey in Asia. It was so named from its being seated between the rivers Euphrates and Tigris; having Assyria Proper on the east, Armenia on the north, Syria on the west, and Arabia Deserta, with the Land of Shinar and Babylonia on the south.

This country is much celebrated in Scripture, from having been the original seat of mankind, both before and after the Deluge; and because it gave birth to Phaleg, Heber, Terah, Abraham, Nahor, Sarah, Rebekah, Rachel, Leah, and to the sons of Jacob, all of whom are celebrated characters in Scripture. Its more ancient name was Aram, or Padan-Aram (Gen. xxviii. 2), so called, because it was first peopled by ARAM, the father of the Syrians.

It was from Mesopotamia that God called ABRAHAM; from whom sprang the Jews, a great part of the Arabs, and, amongst others, the Ismaelites. The whole of this country was sometimes called Syria. (*Hosea*, xii. 12).

MEDIA was situated on the east of Armenia and Assyria, and was bounded on all other sides by lands unknown. This country is said to have been settled by MAIDA, from whom descended the Medes, a people, long famous in the east, who afterwards united themselves with the PERSIANS. The capital of Media was Ecbatana, now called Hamaden, near the Caspian Sea. Here Tobias, during his captivity, married SARAH. (*Tobit*, vii. 13).

ASSYRIA, or, rather, Assyria Proper, now forms part of Persia, and was anciently bounded by Media on its east, Mesopotamia on its north, Arabia on its west, and the Persian Gulf on its south.

This country takes its name from ASSHUR, the grandson of Noah, who first settled the Assyrians, and laid the foundation of their cities. (*Moses*). The appellation Assyria is frequently confounded with that of Syria, and Assyrians for that of Syrians; as by Virgil, Nonnus, and Justin.

SYRIA.—The boundary or extent of Syria has been, like Assyria also very undefined.

SYRIA was anciently divided into Syria Proper, Phœnicia, and Palestina.

Syria was bounded on the north by Mounts Taurus and Amanus, on the west by the Mediterranean, on the south by Arabia Deserta, and on the east by the Euphrates.

In this country were situated Palmyrene, Cœlo-Syria, and some other provinces of less note.

PALMYRENE was bounded by Chalcidene, Cœlo-Syria, Arabia, and the Euphrates. In it were Thapsa, mentioned in the first of Kings, xiv. 26, and Palmyra, or Tadmor, the noble ruins of which are still to be seen.

Cœlo-SYRIA was bounded by Palmyrene, Arabia, Mount Lebanon, and river Orontes. Its capital was Damascus.

(To be continued.)

* Belonging to, or enjoyed by, patriarchs. A patriarch is one who governs by right of paternity, or fatherhood.

SAP IN PLANTS.

The elevation of sap in plants appears to depend on two principles: the one arising from the capillary attraction of the small fibres embedded in the soil, and the other dependent on the changes in the temperature of that portion above the earth's surface. The subject is a curious and interesting one, and we purpose on the present occasion, furnishing our readers with a graphic illustration of the first of these processes, reserving the other for a future occasion.

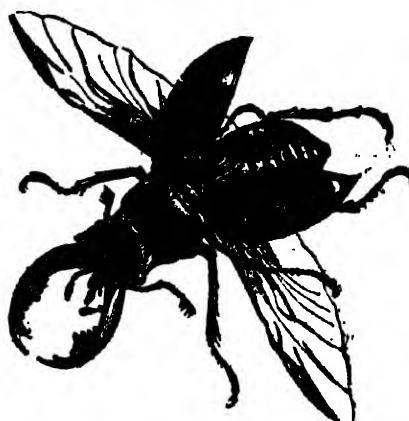
If a person take a skein of cotton, and place the one end in a basin half filled with water, the fluid will ascend the cotton and run over the edge. Now, this appears opposed to the ordinary laws of gravitation, though we shall find, on a close examination, that it is in strict accordance with them. To explain this apparent anomaly, it will be necessary to have recourse to an illustrative diagram.



There are four tubes of different sizes immersed in a basin of water, and it will be seen that the fluid column stands highest in the smallest tube, and that as the tubes increase in size the altitude of the column diminishes. Now, this arises from what is called capillary attraction, or, in plainer terms, the attraction of the water; for the surface of the glass forming the internal surface of the tube, is greater than the weight of water contained in it, and as such it must ascend, and will continue to do so till these forces are in a state of equilibrium. The capillary tubes which form the root are extremely small, and as such they readily carry up the water; so that this apparent exception to the ordinary laws of nature is rendered admirably conducive in the economy of creation.

SELF INSTRUCTOR IN ENTOMOLOGY.

I.—STAG BEETLE.



A KNOWLEDGE of insects being already of great discovered use to mankind, and every day's investigation revealing some fresh benefit which they confer upon a thoughtless world, we intend giving a series of papers under the above title, upon the physical, economic, and moral history of the different tribes; and to avoid

distracting the mind by too many points of consideration at once; we shall generally confine ourselves to the description of a single individual at a time. In doing this, we should wish our readers always to fancy themselves in the particular locality of the insect in question, and "arm in arm" with us as "Guides," to watch its habits, investigate the sources of its enjoyments, trace its uses in creation, and demonstrate the benevolent motives of that Almighty Being, who of his own will, called it from nothing into joyous existence.

The Sun has just delegated the sway of his majestic sceptre to the gentle government of the harvest moon; the cooling air lets fall its condensing moisture, and the warm earth evaporating it again, as it falls, produces the long-disputed phenomena of *ascending* and *descending* dew; a "southern wind, just ready to expire," breathes amongst the road-side herbage, and wafts abroad the "shy-retiring" odour of the different species of mints, meadow-sage, and other aromatic vegetables, which, at this season, correct the offensive smell of rotting flowers, and sweetly embalm the memory of the decaying year; the weary harvest-man slowly wends the shortening way, rejoicing, perhaps, that the day's labour has left him a "*nimble shilling*" for the village saving's-bank; a few bright stars, one after another, launch their pearly orbs into the deep blue ocean of heaven, and paint the reminiscent vigils of the good man, by the thought of their placid beauties ever having been made subservient to the base appetites of ambitious villains, by portending the justice of aggressive wars, or the right of secret murder: for in our past ages of ignorance, such was too commonly the crimson pedestal of British honour—O horrid!—as if "the light that led astray" could be "light from heaven." But,—hush—what creature is that above us, performing *noiselessly* such rapid evolutions—a bat or a beetle? Ah—something has struck your hat, and dropped to the ground,—it is a beetle—a stag beetle—and, faithful to the proverb, has proved himself by the *accident* "as blind as a beetle." Do not, however, conclude from this, that beetles cannot see, or that their sight is imperfect, which would be as unphilosophic as to declare that a man's foot was not well adapted for walking, because it sometimes slipped; the beetle's vision is perfectly suited to its mode of life, and any additional power would have been an injurious waste of means. Gon, in this, teaches us a lesson: profuse as are all his works, they are every one of them produced with the least possible expenditure of means—enough, and no more. Let every man, therefore, humbly imitate the divine model, and lest we should subject ourselves to the admonitory charge, "physician heal thyself," we will at once make for home, and examine our beetle, who is already beginning to recover the stunning effect of his fall.

* * * * *

THE STAG BEETLE (*Lucanus Cervus*) belongs to the Linnean order of Coleoptera, a very numerous tribe of insects, whose distinguishing character is, that they all have their wings covered with two crustaceous cases, which, when they cover, the wings do not overlap each other, (which is the mark of another and very different order), but meet by their edges, and form a straight joint or suture. Therefore, whenever you find an insect with these characters you may be sure that it is a coleopterous insect, or in common language a beetle. Look at the stag-beetle, and you will see the particularities of structure here enumerated. But our specimen belongs also to a genus as well as an order; that is, to a minor subdivision of the order, many genera composing an order. The generic character depends in like manner upon differences of form, but usually of a minuter kind than those upon which the order is founded. Thus

the character of the Lucinidae, or Stag-beetles, is chiefly derived from the shape of the antennae, or "feelers," as they are popularly called, which are "clavated," or club-shaped at the end, and having this club "pectinated," or toothed in a lateral and inward direction. But, again, it is necessary that we should be able to distinguish single families, and, accordingly, the genus is subdivided into species, which, in the insect we are examining, rests upon the circumstance of the male insect having a pair of large horns, or in proper language, jaws. From this, he derives his specific name, *Cervus* or Stag—the *Lucanus cervus*, or Stag-beetle.

This description will enable you to find the name of any insect you may choose to admire, instead of crushing it; and having found the name, you may then acquaint yourself with all that authors have written about it, and become an original observer yourself.

This noble beetle is almost exclusively an inhabitant of Kent, where, of an autumnal evening, he may be seen cutting his way through the atmosphere, sensible to pleasure, and evidently happy. His history is remarkable in several particulars; he is the largest of British insects, and provided with a pair of jaws which every Kentish lad knows to be as strong as they are large. They bite severely, and "hold on" with the tenacity of a vice. These jaws, however, are not designed for carnivorous purposes, for its natural food is decaying wood. Some writers have asserted, that they use them on gallanting occasions in fighting with their fellow males, and that they sometimes bite their adversary clean asunder. But this is evidently fabulous; their jaws, strong as they are, could do no such thing; and we are happy that science helps us to a solution. Look now closely at his jaws; the upper ends are toothed, and with these the decaying timber, upon which it subsists, is cut. Look again at the lower ends, close to the base, and you will observe the inner surface to be flat and rough, like the surface of a double tooth;* this enables it to grind what the upper teeth had previously cut. It is evident, then, that this insect is a peaceful being; and though it be, like the whale, the most formidable of its tribe, yet, like it also, it is one of the most inoffensive.

The stag-beetle is also remarkable for continuing in the larva, or maggot-state, six years, during which time it is wholly employed in *pleasing* an appetite which incessantly prompts it to consume the stems of rotten trees, which would, if left to themselves, become unsightly and injurious; and it is further remarkable for the difference in the size and form of the sexes, the female being smaller than the male, and destitute of the large jaws.

We have only now to point out the exhibition God has made of his attribute in the structure of this despised creature. His fragile wings, so thin as to be transparent, are, nevertheless, strong enough to beat the air with such power, as to drive its heavy body through it, with a speed greatly surpassing the swiftest race-horse. When the wings are spread out, they are nearly twice the length of the elytra, or cases, which cover them during rest; this is accomplished by a series of straps, ligaments, and joints, which cross the membrane of the wings in certain definite directions; one of these joints is placed midway on the anterior edge of the wing, and from it the nervures (so called for want of a better name,) radiate like the sticks of a fan, and with a similar action, fold them up. Drawn up under the wing-cases, they are then far safer than bank-notes in iron chests. The legs and feet are admirably contrived for climbing the rough surface of the tree-stems; and, if Professor RENNIE's ingenious conjectures concerning the palpi be true, it is no less well furnished with the organs of hearing, and has, doubtless, its vocal

* Cuvier, Anat. Comp.

pleasures equally with man, who, in the pride and insolence of his heart, would monopolise the notes of the lark, as exclusively his own, but which nature has kindly given to cheer the fatigues of its sitting mate, as well as call the labourer to his toil, by as sweet a message as sounds can utter. A community of natural pleasures is established as the inviolable right of every living creature under heaven; let us, therefore, think nothing beneath our notice which God has condescended to please—the Stag-beetle is one of these: complete in every conceivable point, beyond our limits even of bare indication;—specially endowed for enjoyment, specially serving the world by the removal of putrescent substances, let it be specially studied and admired, that so we may learn to "praise with understanding," and join in the passionate exclamation of Paul on a far higher occasion. "O, the depth of the riches, both of the wisdom and knowledge of God: for of him, and through him, and to him, are all things; to whom be glory for ever."

Y.

[We should feel obliged by our country readers sending to our Publishers, directed to the Editor, any information they may possess on points connected with Natural History. All original observations sent in this way, will be published in the course of our Natural History articles, and as soon after their receipt as possible. Sketches and Specimens would also be useful, and should be sent to assist in getting up the illustrations.]

ON ALPHABETICAL WRITING.

It is impossible for imagination to form an idea of a discovery more important, and more conducive to the convenience of the human race, than that of *Alphabetical Writing*; nor is there any one whose origin is involved in greater obscurity. A thousand fanciful theories, a thousand absurd opinions, have been broached on the subject, and it is extremely difficult to select from the mass any thing satisfactory, or even probable.

As *Alphabetical Writing*, or *signs*, meant to signify certain sounds, which either alone, or combined, formed words to signify not only certain things and actions, but qualities, and abstract ideas, must have been too artificial to have occurred in the very early ages of the *World*, we are led to suppose, and many instances concur to confirm the supposition, that *Pictorial Writing* was the first in use. Among the ruins of *Babylon*, large bricks have been found, on which figures of animals of various species, and in various attitudes, painted to resemble life, with the colours burnt in, (as *Herodotus* asserts, who flourished more than 400 years before Christ) and which were probably the records of certain events. Nearer to our own times, on the discovery of *Mexico*, where *Man* seemed but little advanced from primeval simplicity, the same method of recording transactions of importance was employed. The Mexican monarch employed a number of artists, to paint on cotton cloths historical pictures of the principal national events; and some of these were sent, on the landing of *Cortez*, to transmit to the court representations of the ships, the horses, the cannon, and other arms, and the men, together with any occurrences that deserved record.

But this method of writing was extremely defective, and incapable of expressing more than a few striking circumstances, without showing the connexion, and without the possibility of embodying thought, or describing qualities not visible to the eye. To remedy in some degree this defect, hieroglyphical characters were used, consisting of symbols, which were supposed to bear some analogy to the things intended to be expressed: thus, a circle represented

eternity, because it has neither beginning nor end; a new-born child, the rising-sun, because just entering on its journey of life; an eye, knowledge, for very obvious reasons.

This method of recording things, visible and invisible, was exceedingly inadequate to the purpose for which it was designed; it required great space to express a few things, and was incapable of doing so in any degree clearly and fully; in consequence, this kind of writing was enigmatical and confused, easily misinterpreted, and, therefore, the source of endless mistakes; it could not be brought into general use, but was chiefly confined to the priests, who employed the hieroglyphical characters as a sacred kind of writing, calculated to give an air of mystery to their learning and religion.

The next improvement in the art of writing appears to have been the invention of arbitrary characters, which possessed no resemblance or analogy to the objects they were intended to represent.

Such are those of the Chinese, which do not express any simple sound, by the combination of which words are formed, but every single character is significant of an idea; this necessarily renders the required characters exceedingly numerous, and that people has accordingly nearly 80,000 of them, which, to read and write with correctness, require the study of a whole life. It is no wonder, therefore, that the Chinese make no advances in science; their learned men grow grey in acquiring the rudiments of knowledge,—they spend their whole time in the portico of the temple, and are cut off by death before they can be properly prepared to enter it.

These characters are supposed to have been originally hieroglyphics, but to have been abbreviated in the form, for the sake of expedition and ease in writing them; that they are a kind of hieroglyphics, or characters standing for things, independent of sound, is evident from their being understood by several nations ignorant of the Chinese language; they resemble in this respect, our arithmetical figures, which have no dependence on words, but denote the same object in almost all the nations of Europe, though each calls them by different names.

Although this mode of writing possessed many advantages over that by hieroglyphics, it was still too imperfect and laborious to satisfy mankind, who are always pressing forward towards perfection, though they never completely attain it. Reflecting men began to consider that, though the number of words that compose a language is very great, yet the number of articulate sounds used in forming those words is but small; they therefore invented marks for those simple sounds, which being combined in various ways, would serve to express every word that is used to express ideas and abstract thoughts.

Men did not, however, reach this perfection of invention at once; they first, it is supposed, formed an alphabet of syllables, beyond which some nations of India and Ethiopia have not yet advanced: even this must have been a great improvement, and enabled writers to express words to which hieroglyphics were inadequate; but it was still a cumbersome and imperfect method, with which men could not be long content. "At length," says Dr. Blair, "some happy genius arose, and tracing the sounds made by the human voice to their most simple elements, reduced them to a very few vowels and consonants; and by affixing to each of these, the signs which we now call letters, taught men how, by their combinations, to put in writing all the different words, or combinations of sound, which they employed in speech. By being reduced to this simplicity, the art of writing was brought to its highest state of perfection.

Who this happy genius was, we have now no means of ascertaining; his name has sunk in the dull waters of oblivion, but it de-

serves to be immortalised much more than those of warriors, poets, or historians; his invention has enabled authors to hand down their works to the latest posterity—if they deserve to be thus honoured; to carry their researches into the arcana of science, and to give to the world the result of those researches, without being compelled to spend the greatest part of their lives in acquiring a knowledge of the vehicle by which the result of them could be recorded.

The period, too, when this invention took place, is equally unknown; though *Cadmus* is said to have first taught letters to the Greeks, it by no means follows that he was the inventor. *Cadmus* is supposed to have been cotemporary with *David*, or as some think, with *Joshua*; but alphabetical writing seems to have been in use long prior to the time of Moses: it is the fashion to ascribe the discovery of the Arts and Sciences of remote antiquity to the Egyptians, but we have no certain proof that they were the ingenious authors of this admirable discovery.

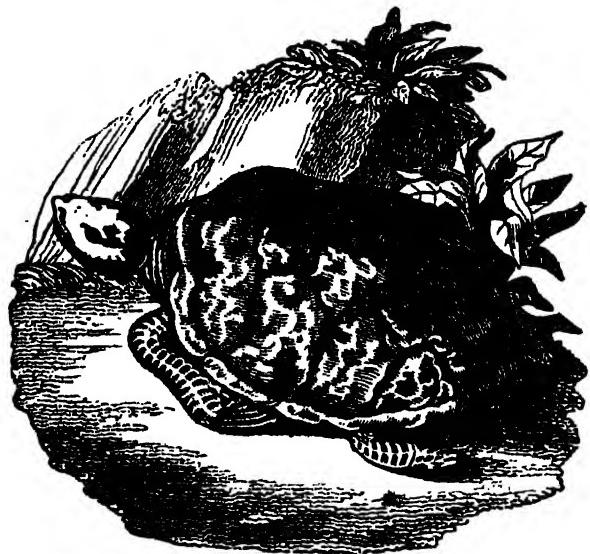
The alphabet of *Cadmus* consisted of only sixteen letters, the rest having been added at different periods, as marks were wanting to express simple sounds not already provided for. The Roman alphabet, now in use in most parts of Europe and America, is merely a variation of the Greek; the Greek characters, especially those used in the oldest inscriptions, greatly resemble the Hebrew and Samaritan, which are universally allowed to be the same which Cadmus carried from Egypt, or Phenicia, to Greece; the arrangement, likewise, of these different alphabets, is another proof of their common origin.

The alphabets of different languages contain a different number of letters;—the English has 26; the French, 23; the Hebrew, Chaldee, Syriac, and Samaritan, 22 each; the Arabic, 28; the Persian, 31; the Turkish, 33; the Georgian, 36; the Coptic, 32; the Muscovite, 41; the Greek, 24; the Latin, 22;* the Slavonic, 27; the Dutch, 26; the Spanish, 27; the Italian, 20; the Ethiopic and Tartarian, each 202; the Indians of Bengal, 21; the Bramins, 19.

Amongst all these there is, probably, not one that is not susceptible of great improvement, could the universal consent of those who use it be obtained to the alteration: this, however, is almost an impossibility, the difficulty being infinitely enhanced by the wide diffusion of knowledge, and the immense multitude of books published since the invention of printing. When the art of writing was known but to few, and printing was totally unknown, alterations in, and additions to, the alphabet might have been comparatively easy, but now, they are next to impossible.

HAWK'S-BILL TURTLE—TORTOISE-SHELL.

The Hawk's-bill turtle (*Testudo imbricata*) gets its scientific name from the arrangement of the plates, which overlap each other like the tiles on a roof; and it gets its common English name from the partial resemblance of its mouth, seen in profile, to the bill of a hawk. Its head, neck, and legs are longer in proportion to their thickness than those of the other turtles; it is more active, swimming with greater velocity, and righting itself when turned. Its eggs are eatable, but its flesh is not good, and the chief value of it to man are the plates on its back, which are the true tortoise-shell of commerce, and have been highly esteemed from the earliest ages. There are thirteen plates in the central part, surrounded by twenty-five smaller ones. The large central plates are the finest shell; and they are often of considerable thick-



ness. The plates of shell do not form the entire case of the animal. The inner or supporting part is bony, and may be considered as part of the skeleton. The true skin is between the bony substance and the plates of shell. The plates are a production of that skin, and in the living state they are covered by an epidermis, or scurfskin. The common way of obtaining the plates is to heat the entire back-piece of the animal, by fire applied under the hollow on the inside. By that means the gelatine of the skin is dissolved, the skin itself swells, and the plates are easily detached entire. A turtle of about 300 pounds weight will produce about ten or twelve pounds of shell; but, in the common way of obtaining the shell, the animal, which is otherwise useless in the arts, is sacrificed. In the eastern isles, where the Hawk's-bill turtle is very abundant, the Malays, who procure large quantities of shell for the Chinese, pursue a different method. They catch the turtle alive, and retain it while they detach the central plates, so dexterously as not to lacerate the skin. The animal is said not to show much uneasiness during the operation, and when that is performed it is returned into the sea, where, after a time, the plates are said to be reproduced. That is by no means unlikely, as the reproduction of parts is not uncommon among reptiles, any more than among some of the Crustacea, which have at least some analogy with the reptiles.

The Hawk's-bill, or shell turtle is much more widely diffused than the epicure's turtle. It is found in almost all the tropical seas; being peculiarly abundant in the shallows near Belise, the chief settlement in the mahogany country of Honduras. It is indeed general in the Caribbean Sea; and is found browsing on its favourite sea weed, wherever that abounds in latitudes sufficiently warm. It is also plentiful on the shores of tropical Africa, on those of New Holland, and in the Indian Ocean. Tortoise-shell is thus so abundant, that though it has been a favourite article of luxury from very early times, the supply is still undiminished.

M.

My principles are such as lead me naturally to suppose, that he who receives a benefit, must remember it for ever, if he would approve his honesty; but that he who confers the benefit, should instantly forget it, unless he would betray a sordid and illiberal part.—*Demosthenes*.

*X, Y, Z, are found only in words that are derived from the Greek; W is of Saxon origin.

THE GUIDE TO KNOWLEDGE.

EDITED BY MR. W. PINNOCK,

AUTHOR OF "PINNOCK'S CATECHISMS," "GRAMMAR OF GEOGRAPHY AND HISTORY," ETC., ETC.

No. XI.]

SUPPLEMENT, SEPTEMBER 1, 1832.

PRICE
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GUIDE TO THE NATURAL HISTORY OF SEPTEMBER.



(*The Last Load.*)

THE LAST LOAD.

Come forth, my lord, and see the cart
Drest up with all the country art.
The horses, mares, and frisking fillies,
Clad all in linen, white as lilies.
The harvest swains and wenches bound
For joy, to see the hook-cart crown'd ;
About the cart, hear how the route
Of rural younglings raise the shout ;
Pressing before, some coming after,
Those with a shout, and these with laughter.
Some bless the cart, some kiss the sheaves ;
Some prank them up with oaken leavos,
Some crosse the fill horse, some with great
Devotion, streak the home-borne wheat :
While other rustics, lesse' attent
To prayers than to merriment,
Run after with their breeches rent.

HENRICK.

OF THE HARVEST.

By the term harvest is meant the season of reaping and gathering in corn and fruits. If used figuratively, it signifies the product or reward of a person's labour.

The time of commencing the harvest in this country varies greatly in different districts. It is usually begun in the southern parts of ENGLAND about the beginning of August, but in the more northern districts of Scotland, the harvest does not commence till the first or second week in September. And it is but rarely that, in this part of Great Britain, it is finished, even in the most favourable situations, before the end of October; and, not unfrequently, this

time is protracted till the middle of November, till the corn has been ripened by the frost.

At Inverary, the seat of the Duke of Argyle, the corn is so often spoiled by the rain, that the duke has built an immense barn, with a draft of air through it, and pins, for the purpose of hanging the wheat on to dry it.

The manner of gathering the corn in different parts of the country, is also as various as the periods at which it begins. In some parts of the country, it is the custom to reap or cut the corn with a hook, or sickle, and bind it up in sheaves of a moderate size; and in others, it is mowed down with a scythe, and after a few days having been allowed to dry the straw, it is put into heaps, and shortly after housed in barns, or put into ricks.

Some farmers use a tooth sickle, while others use a sharp cutting one: the latter is more usually called a hook (*or reaping-hook*). In many parts of the country, the women are seen to use the hook as well as the men. Wheat is usually cut down with a hook or sickle, but barley, oats, &c., with a scythe, excepting when the crop is very heavy, in which case the hook is preferable.

When the corn is housed, some curious ceremonies have been, and are still observed in various parts of the country, called the "Harvest Home," which, however, like other customs of olden time, is fast wearing away; and in many places it is not practised at all, and where practised, it scarcely deserves the name of that once-happy festival, when

Our rural ancestors, with little blast,
Patient of labour when the end was rest,
Indulged the day that housed their annual grain,
With feasts and off'rings, and a thankful strain :

The joy their wives, and sons, and servants share,
Laws of their land, and partners of their care :
The laugh, the jest, attendant on the bowl,
Smoothed ev'ry brow, and open'd ev'ry soul.

POKE.

This month is also the season of another kind of harvest, namely, that of *Hops*. The hop is a climbing plant, and is usually grown in large fields, called gardens. The hop is cultivated on account of its great use in malt liquors. It is grown in rows, and to every row of plants there is a corresponding row of high poles, up which they run to the very top. When the poles are well covered, and the crop fine, a more elegant appearance of nature than one of these gardens is seldom seen. At the time of gathering, the binds are cut with a knife at about a foot from the ground, when the poles are pulled up, the plants clinging to them, and are laid on frames made for the purpose, when the fruits are picked off, and deposited into cloths or baskets prepared for their reception.

Hops can be grown in all parts of England, but the counties mostly celebrated for them, are the counties of *Kent*, *Surrey*, *Gloucester*, and *Worcester*; but the finest are grown at or near *Farnham*, in *Surrey*.

We have often mentally compared August to the prime of man's life. In the latter, the wild and passionate fervour of youth is past; but the chilling influence of old age has not yet begun to creep over us, and at once lessen our pleasures and damp our feelings of enjoyment. We have the strength of youth without its too fervid passions, and the wisdom and calmness of age without its chilling and debilitating influence. The same midway balance between the extremes of summer's heat and winter's frost is now observable. Let us not forget that our mature age is equally liable to censure, if we then exhibit either the wild follies of youth, or the imbecility and dislike of action of extreme age. Above all, let us remember, that it is in youth that we must form the character of our maturity.

SEPTEMBER.

SEPTEMBER derives its name from being the *seventh* month from March, which, with the Romans was the first month of the year.

A delightful author has observed of this month; "the year steps onward towards its temporary decay, if not so rejoicingly, even more majestically and gracefully than it does towards revivification. And if September is not so bright with promise and so buoyant with hope as May, it is even more imbued with a spirit of serene repose, in which the only true because the only continuous (!) enjoyment consists. Spring 'never is, but always to be' blest; but September is the month of consummations—the fulfiller of all promises—the fruition of all hopes, the era of all completeness."

How splendid all the sky ! how still !
How mild the dying gale !
How soft the whispers of the rill,
That winds along the vale !
So tranquil nature's works appear,
It seems the Sabbath of the year !
As if, the summer's labour past, she chose
This season's sober calm for blandishing repose.

Although the summer may have been wet and cold, it has been observed, in all latitudes between 45° and 55° that September is usually the finest month of the year. Like an old friend, the season of universal life departs with a smile, and also

—like the sun
Seems larger at his setting.

But notwithstanding this average serenity, the stake of the husbandman is so great, that every faculty of his soul quickens with the fear, lest untimely winds and rains, should destroy the hopes of the year, and the unbelieving adage is always upon his lips, "September blow soft, till the fruits in the loft."

The sunsets of September are unparalleled in magnificence. The clouds emblazoned in gorgeous livery, and yet not deficient in those tender hues which embellish a spring morning, fill the upward-looking soul with unutterable emotions. A soft "etesian wind" exerts its "sweet resistless forces," and gently stirs the overhanging glory into an evolution of new wonders—ever changing, but ever beautiful. Beneath this bright canopy the "tillers,

of the earth" are every where engaged in their ingathering labours, and many are the pleasing associations which connect themselves with their joyous occupation. But he who builds his hopes "above the ruinous skies," shudders as he perceives a black thread drawn across this charming scene; sin has marred the prospect, and throws dust in the eyes of him who would fain look upon it as a perfect garden—the labourer is ignorant—his soul is in the closest alliance with depraving lusts—the landholder is covetous—the steward cruel—and between these millstones the poor are ground to powder—whose fault is this ? Those to whom much is given, of them much is required ;—how awful the responsibilities which riches confer ! It is not our present business to investigate these matters ; we have mentioned them with sorrow, but truth compelled us to dash the September prospect with a tinge of woes, which, like huge nightmares, suffocate the rising pleasures of the season. If the poor are ignorant let them be instructed ; we throw our pennyworth into the public treasury, and we beseech the good and great to remember that December frosts follow the mild atmosphere of September, and to ask themselves whether any soul who helped to produce their Christmas comforts, be then perishing of cold and hunger.

We shall now proceed to paint the portrait of the month, and trust that whatever might offend the eye, in so good a picture, will by us be "cast, discreetly into shade."

QUADRUPEDS.

ANIMAL HARVESTS.

It has been well remarked that, "to collect provisions for their future use, to hoard them in safe places, and to use them gradually for their daily sustenance, are actions in the human race which display and require great prudence, foresight, just reasoning, will acting upon judgment and much self-command. A very large portion of mankind will not exert either this forethought, or the self-government that alone makes it effectual." Yet this admirable quality, of which the majority of the human race are wilfully deficient, is faithfully and undeviatingly observed by a number of little four-footed denizens of our woods and hedges. Man is not the only being who gathers the harvest, and stores it away in barns, for the supply of future need ; this prescient faculty may be now seen, in the busy labours of our squirrels, hedgehogs, dormice, shrews, field-mice, and others, who, during this month, are sedulously employed in collecting nuts, acorns, grains, &c. &c., and burying them in little chambers excavated in the earth for that purpose, excepting in the case of the squirrel, who usually hoards his ample stores in the convenient hollow of some retired tree. It is a pretty sight to watch a field-mouse, gleanings his winter provisions, and going through his toils with such little agility that his labour seems to be mere play ; and as the hedgerows are now comparatively bare of their leafy drapery, it may be easily observed, for it is not an uncommon spectacle, even in places of considerable resort. Now if this power of collecting food for future wants be an evidence of reason in us, why should it be deemed, or called by the negative name of *instinct*, in them. It is reason so far as it goes, and acts not blindly, but according to circumstances, the difference chiefly being, that man has the power of disobeying the promptings of his mind, but the mouse has not. The harvesting of these gentle beings teach us, therefore, that perfect obedience, so far as they are concerned, is productive of perfect happiness—they cannot violate the laws of their existence, and are happy ;—we can, and do, and are miserable. But in sorrowing, we rejoice in the hope of our great law-fulfiller, that mysterious Being, "by whom all things were made, and who in his own person has redeemed the earth from that fatal curse, which is too plainly evidenced in the wanton and insensate destruction, which for amusement, is so often heaped on the heads of such miracles of structure, beauty, and innocency, as the field-mouse."

WARNING.

STOATS and weasels are now very sedulous in their attention to poultry yards. They prowl about with thievish perseverance, and many an unlucky rat falls a victim to their assiduity. But, as benefits are usually the result of cost, a fine capon, or a favourite hen, too often "pays the piper."

BIRDS.

MIGRATION OF BIRDS.

The stork in the heaven knoweth her appointed time; and the turtle, and the crane, and the swallow, observe the period of their coming.—*Jas. viii. 7.*

In the present month many opportunities will occur of viewing this marvellous phenomenon; and to enable our younger readers to do this with certainty and profit, we subjoin the following account, as an index to their curiosity.

Birds have "a local habitation," a native country, where they spend their sweetest hours, rearing their young, and gladdening the listening world with their songs. The family reared, both old and young depart their "native vales," and make a foreign tour. Thus, their time is nearly equally divided, one half at home, and the remainder "abroad." All birds, with the exception of those in whom a long residence in towns has partially changed their natural habits, are, in a greater or less degree, subject to this periodic desire of "seeing the world." The prompting influence is sudden and unpremeditated in its operation, generally, the birds are all here today, and all gone to-morrow. When they are caged, a sudden restlessness is observed to seize them at the period of migration; they have usually taken their evening roost, and ruffled up in slumbering composure, when—flutter—they bound suddenly from their perches, and beat their narrow boundaries with the most anxious solicitude. This agitation continues several days. Some birds travel in the daytime, but the greater part, under the protecting shadows of night; while a few use both times, according to circumstances. In passing over land they occasionally halt for food; but rarely sleep till their destination is accomplished. They usually fly at so great a height, that they are often heard than seen; they also fly always with the wind *against* them. In the performance of these journeys, food is the object; and they unerringly make for those countries where suitable and sufficient food will be found. How strange a thing have we here presented to our consideration!—talk we of wonders—do we bluster about the pyramids of Egypt, or the colossus of Rhodes?—look at a departing swallow—think of his unerring instinct, his untiring wing, and his wonderful courage—ready to cross an ocean, without food, pilot, or experience: look at him pruning his agile wing, and conceive if you can, how it be possible, that little creature can, in the dark hours of midnight, steer a never-failing course across that ocean, upon which even the hawk's eye of Nelson missed his enemy. Change the example—look at the solan-goose, and behold him year after year, and through those past ages, before the compass was invented, when **GREAT MAN** was afraid in his voyages to lose sight of the skirting cliffs, behold him then, crossing the trackless solitudes of the Northern Ocean in a *right line*, direct to a particular rock, his former residence, and which, perhaps, no eye could see, at ten miles distance.—Where is the undiscovered cause?—Can the sagacity of man devise any adequate physical reason? We think not; and that it must ever remain, as it is now, a stumbling-block to our boasted comprehension; but yet, at the same time, an altar, upon which the good man may offer his devotions to that great Mediatorial and Creative Being, who, in daily turning the world upon its axis, and guiding a tiny bird upon the vast ocean, equally confounds our intelligence, and exalts his own glory.

The northern regions of the earth have, from time immemorial, been the residence of unnumbered millions of water-fowl, where surrounded by boundaries of everlasting snow, in vast marshy solitudes, from age to age no other sound has waked the dreary echo, but their own melancholy screams. There in safety they rear their young; and, while summer lasts, find in the amazing multitude of insects that fill the air, a never-failing banquet. But as soon as the sun begins sensibly to withdraw his vivifying influence, and chilling blasts and dull fogs predominate, the presentiment of dead winter steals among them, a prophetic instinct, borne on atmospheric wings, tells them of coming want, points them to a land of plenty, and determines them to begin the journey. Then is the spectacle to be witnessed, of innumerable hosts soaring into the air; each species marshalled with the greatest regularity, and under the direction of the great God that made them, pouring down upon the southern nations, at the incredible speed of two hundred miles an hour. This phenomenon may be

observed by the watchful naturalist, but in a less striking degree, among birds of temperate climates seeking a more southern country:—thus, the birds of North America may be seen, on the approach of winter passing to Mexico and the West Indies.

We have here subjoined a table of the arrivals and departures of birds from Britain for the month of September.

ARRIVALS.

- MOUNTAIN FINCH (*Fringilla montifringilla*)
- CROSSBEAK (*Loxia curvirostra*)
- FIELDFARE (*Turdus pilaris*)
- ADERDEVINE (*Carduelis Spinus*)
- TURNSTONE (*Strepsilus Interpres*)
- SANDERLING (*Calidris arenaria*)
- SNIPE (*Scolopax gallinula*)
- GANNET (*Sula bassana*)
- CURLEW (*Numerus arquata*)
- BRAN GOOSE (*Anser ferus*)
- KNOT (*Tringa cinerea*)
- WOODCOCK (*Scolopax rusticola*)
- ROBIN (*Sylvia rubicola*)—approaches cities

—from northern countries; and remain with us, till returning spring, and connubial fires, recall them home.

DEPARTURES.

- SWIFT (*Cypselus murarius*)
- CHIMNEY SWALLOW (*Hirundo rustica*)
- WHITE THROAT (*Currucina cinerea*)
- BABILARD (*Currucina garrula*)
- FLUSHER (*Lanius collurio*)
- NIGHT JAR (*Caprimulgus europeus*)
- TURTLEDOVE (*Columba Turtar*)
- LAPWING (*Vanellus cristatus*)
- RING BLACKBIRD (*Merula torquata*)
- WHEATEAR (*Saxicola Oenanthe*)
- NIGHTINGALE (*Sylvia luscinia*)
- SEDEGBIRD (*Sylvia trochilus*)
- WOOD WREN (*Sylvia sibilatrix*)
- BLACKCAP (*Sylvia atricapilla*)
- FAUVETTE (*Sylvia hortensis*)

—to southern countries, with their well fledged young; who, with the surviving parents, return in spring, to rear another migratory horde.

Pretty birds, welcome, and farewell!

There are who doubt this migratory voyage,
But wherefore, from the distincte of the flight,
Should wonder verge on disbelief,—the bulk
So small, so large, and strong the buoyant wing?

DESTRUCTION OF THE PARTRIDGE.

—Fear not, ye harmless race,
In me no longer shall ye find a foe!
Even when each pulse beat high with bounding health,
E're yet the stream of life, in sluggish flow,
Begin to flag, and prematurely stop
With ever-boding pause, even then my heart
Was never in the sport; even then I felt,—
PLEASURE FROM PAIN WAS PLEASURE MUCH ALLOYED.

On the fourteenth of this month, "man's protection, selfishly bestowed," is withdrawn from these inoffensive creatures, and "sport," as it is disgracefully called, becomes lawful. Partridges have just now recovered the bloody havoc of the last year, and are seen in large coveys about stubble fields, or such corn as may still be left standing. Before the gathering of the crops they lived comparatively secure from their natural enemies, but deprived of their friendly shelter, they wander in the day time to solitary groves and covers, but are obliged to return to the open fields at night lest they should be destroyed by foxes and weasels. But from man they have no escape:

Alas, ho comes! yes, yonder comes your foe,
With sure-determined eye, and in his hand
The two-fold tube, formed for a double death.
Full soon, his spaniel ranging far and wide,
Will lead his footsteps to the very spot,
The covert thick, in which, falsely secure,
Ye lurking sit, close huddled, wing to wing:
Yes, near and nearer still the spaniel draws,
Retracing oft, and crossing oft his course,
Till, all at once, scent struck, with pendant tongue,
And lifted paw, stiffened he panting stands

Forward, encouraged by the sportsman's voice,
He hesitating creeps; when flush, the game
Up-springs, and, from the levelled turning tubes,
The glance, once and again, bursts through the smoke.

We fear not the sneers of those, who charge a dislike of "sporting," to a puling sensibility, when we enter our protest against the destruction of the Partridge, or any other "game" as an "amusement." We maintain it to be a cruel and a heart-hardening practice. If "game" must be destroyed, let them be caught and killed by properly appointed persons; at present, the skill of our sportsmen, being in the majority of cases, about equal to their understandings, twenty birds are wounded for every one killed, and then broken wings and shattered legs, fill the once peaceful woods with mourning. Is this a practice likely to fit the college student for the pulpit, or to aid the development of those principles which constitute the kind husband, the gentle father, or the forgiving friend? We know not. On the contrary, it must beget an insensibility to pain in others, which at once lays charity in ruins, and buries every social virtue in the common wreck. Let there be no more "amusements" then, which have death in any shape, for their object, but let us cultivate peace and good will towards each other; but which, however, never can be done while men exult in filling "tuneful bills with blood!" Pigeon matches are an abomination to the good feeling of the country.

REVIVAL OF SONG IN BIRDS.

Released from all the duties, all the cares,
The keen, yet sweet solicitudes, that haunt
The parent's breast; again the song
Trills from the wood, or from the garden bough.

GRAMAME.

At this time, as if to aid the general charm of the season, we have a partial revival of the spring melodies. They are, however, of a very languid character, and excite a melancholy, but still highly pleasing recollection of the more energetic harmonies of early summer.

The Thrush, the Blackbird, and the Woodlark now,
Their pleasing songs resume;
The Stone Curlew, his calling note repeats,
And the Wood Owl continual breaks the depth
Of Sylvan darkness with discordant monos.

AUTUMNAL CONGREGATION OF SOLITARY BIRDS.

Abover the time of "corn-carrying," a habit of congregating together in large flocks, becomes prevalent among many species of birds, who, before, had lived in a solitary state. Birds are generally very social creatures, and it would appear, that, as soon as the task of rearing the young terminates, they give up their "private residences," and unite, together with their families, into large commonwealths. Plovers, linnets, sparrows, pipits, woodlarks, and various species of finch, may now be observed in these republican flocks, flying about from field to field, from daybreak till noon.

MICHAELMAS GOOSE.

At Michaelmas by custom, right divine,
Geese are ordained to bleed at Michael's shrine.

The fact of geese being once very commonly eaten on Michaelmas Day, will be within the memory of most of our readers. The custom is also still observed in the old farm-houses, where ancient ploughs are yet obstinately preferred to modern ones. It is said to have arisen from the circumstance of Queen Elizabeth, being at dinner on a goose, at the time when she heard of the defeat of the Spanish Armada, and that she ever afterwards ate of a goose on the anniversary. But pretty as this derivation is, we have no faith in it, and believe the practice to have arisen simply from the plenty and perfection of stubble-geese at this season.

In "Poor Robin's Almanac" for September, 1695, are some quaint lines on this subject; and as quietness assists digestion, we recommend the closing admonition to the serious attention of all

Geese, now in prime season are,
Which if well toasted, are good fare:
Yet, however, friends, take heed,
How too much on them you feed,
Lest, when as your tongues run loose
Your discourse do much of goose.

REPTILES.

The croaking of young frogs cease in the meadows, and they are observed to betake themselves to solitary meditation beneath the large-leaved plants. Snakes cast their skins, literally "crawling out of their own mouths."

FISHES.

Herrings (*Clupea harengus*) come from the deep seas to the warmer shores and estuaries to propagate their spawn in places where the sun can reach them. Salmon (*Salmo salar*) ascend rivers for the same purpose, and show an unconquerable resolution in its accomplishment. Eels (*Anguilla communis*) after their reproductive operations, descend rivers to recruit their strength in cooler waters. Char (*Salmo alpinus*) spawns. The heaving seas begin to feel the influence of returning winds, and cast up from their unfathomable depths those shelly treasures which delight the conchologist. We shall return to these subjects in our winter numbers, and give ample space for their development.

INSECTS.



SWALLOW-TAILED BUTTERFLY (*Papilio Machaon*)—in all the stages of its existence.

Insects, in many respects, are creatures of surpassing interest. They are the most numerous of all the living tribes, and display more than any other created beings, the infinitely diversified skill and benevolence of their great author. Size, form, colour, function, and sense, are combined in such ever-varying proportions, and always with such unchasing harmony, that the soul of the spectator falls back upon her native nothingness, in a stupor of amazed delight. Happiness is the common lot of the whole order, and considerable intellect the birthright of many of its individuals. Mind is here seen to be totally independent of matter—it acts as effectively in the insect of an atom long, and of the density of air, as it does in a six-foot giant, who thinks and acts as if he was the author of his own immensity, and who never saw an insect in his life, except, indeed, the fly that spets his looking-glass. On all these accounts, and for their economic uses, insects commend themselves to our notice, which has only to be bestowed, and they will surely command our admiration.

We subjoin a list of a few of the most conspicuous, which may now be studied in their native haunts.

Stig Beetle—*Lycanus cervus*—and a multitude of other beetles.
Death's-head Hawk-moth—*Acherontia Atropos*.

Bindweed Hawk-moth—*Sphynx convolvuli*.
 Elephant Hawk-moth—*Sphynx Elpenor*.
 Saffron Butterfly—*Papilio Hyale*.
 Swallowtail, B.—*Papilio Machaon* (see cut).
 Pearl Skipper, B.—*Panphilus Comma*.
 Painted Lady, B.—*Cynthia Cardui*.
 Scotch Argus, B.—*Hipparchia blandina*.
 Red Admiral, B.—*Vanessa atalanta*.
 Large Green Locust—*Acrida viridissima*.
 Voracious field cricket—*Acrida verrucivora*.

Wasps are very abundant, and very troublesome; and in the southern counties hornets are numerous, and sting severely.

Flies are very plentiful, and are deserving of minute attention. They are a small race, and dressed in sober hues; but the student of nature, in his entomological pursuits, should never forget that diamonds look like worthless pebbles, till investigation demonstrates their value; and that within the dullest grubs, the most gorgeous butterflies are concealed. Knowledge must be earned.

Ants still afford opportunities of profitable investigation.

Glowworms shine in the hedges with uncommon brilliancy.

Thousands of insects are preparing their winter habitations; and we shall endeavour to rival the studies of our readers, in investigating and illustrating them, through the coming season. Spiders are numerous, and present very wonderful examples of insect-architecture and insect mind. We shall close this very brief article which we only print as a finger-post to wisdom, by an account of the remarkable phenomenon known by the name of *Gossamer*. About this time, the ground is frequently covered with innumerable spiders' webs, spreading over every thing like a robe of filmy silver. At the same time it may be seen, as high as the sight can reach, floating in the atmosphere. This beautiful spectacle is caused by multitudes of small spiders, called, from this circumstance, gossamer spiders, which, when for some unknown purpose, they are desirous of ascending the upper regions of the air, have the power of discharging a number of long threads, to which they attach themselves, and thus becoming buoyant, ascend gently to vast heights, and when the object of their ascent is accomplished they coil up the expanding gossamer—furl their sails, and gradually descend. They may be seen sinking, in downward undulations the sun illuminating their silky hosts, and by the refraction of his light producing an ocean of aerial glistenings. "Or if," as the author of the 'Months' elegantly observes, "you are in time to observe them before the sun has dried the dew from off them, in the early morning, they look like robes of fairy tissue-work, gemmed with innumerable jewels."

We shall notice this subject again; but shall conclude for the present, with the following very graphic description from Gilbert White's "Selbourn."

"On September 21st, 1741, being intent on field diversions, I rose before daybreak; when I came into the inclosures, I found the stubble and clover-grounds matted all over with a thick coat of cobweb, in the meshes of which, a copious and heavy dew hung so plentifully that the whole country seemed, as it were, covered with two or three setting nets, drawn one over another. When the dogs attempted to hunt, their eyes were so blinded and hoodwinked they could not proceed, but were obliged to lie down and scrape the membranes from their faces with their feet. As the morning advanced the sun became bright and warm, and the day turned out to be one of those most lovely ones, which no season but the autumn produces, cloudless, calm, serene, and worthy of the South of France itself."

"About nine, A. M., an appearance very unusual began to demand our attention, a shower of cobwebs falling from very elevated regions, and continuing without any interruption till the close of the day. These webs were not single filmy threads, floating in the air in all directions, but perfect flakes or rags; some near an inch broad and five or six long. On every side the observer turned his eyes, might he behold a continual succession of fresh flakes falling into his sight, and twinkling like stars."

B O T A N Y.

FRUITS.

All that concerns human beings has been made upon a principle of benevolence.—TURNER.

* This glorious truth is nowhere more strongly exemplified, than



in the display which, at this season of the year, is made by the Orchard Trees. The rosy-cheeked apples begin to breathe perfume from their umbrageous chambers; and the peaches and nectarines add their fragrance to the universal sweetness. "Against the wall, the grapes have put on that transparent look which indicates their complete ripeness, and have dressed their cheeks in that delicate bloom which enables them to bear away the bell of beauty from all their rivals." Melons have attained their greatest perfection. Walnuts weigh down their mighty branches to the earth, and seem to invite the hand of the gatherer; and the soberly-coloured filbert peeps from her shady recesses like prudence amidst profusion. This superabounding goodness on the part of the Creator, may well rescue us from all the foolish fears which have been recently expressed, lest population should one day outgrow the productive powers of Nature. Our bulwark against this, is, that plants possess a principle of infinite improbability. The six-leaved rose of the fields, has become the hundred-leaved rose of our gardens. The austere crab of the woods, is known as the father of twelve hundred varieties of apple; filberts are the cultivated descendants of the wild hazel; corn-plants, of every kind, are only improved grasses; and the whole kitchen-garden, in like manner, exhibits a series of transformations little less than miraculous. The dry and stringy have become juicy and succulent; the tall and thin sink down into a luxuriant obesity; colours of all sorts change, new products seem to be created, poisons vanish, and increased and increasing nutriment every where abounds. So great are the rewards of industry. Shall we then relax our exertions, shall we not rather pay still greater obedience to the command "IN PLENTY LIE FAIRNESS" and as we work, learn to admire those beautiful laws by which God has made the replenishing of the earth so easy and so delightful? It is man, and not his Maker, who deprives so many thousands of their "daily bread;" the reaper gathers in the harvest, and too often retires from the denuded fields to starve; at this does not originate in any natural deficiency—famine results immediately from human sources.

These reflections will prepare us to hail the appearance of a September orchard, not only as one of the kindest gifts of Providence, but also as one of the finest proofs of the moral greatness of Britain. Cultivated fruits are the first indications of civilization, and their quantity, a measure of its degree of perfection. In this way our orchards may become very pretty histories of England. The crab, the sloe, and the hazel-nut, describe our aboriginal condition; the plum, the apple, the cherry, the pear, and the peach, record our colonisation by the Romans; the fig-tree, the vine, and the raspberry, tell of our crusades to the Holy Land; the gathering of these together in the gardens of monasteries, amidst the ruins of which they still flourish, evidence the all-powerful dominion of the Romish church, in those dark ages when she was the sole conservator of knowledge; the great orchards which adorn the mansions of the old nobility announce the glorious era of Queen Elizabeth, when mind first burst into the glorious liberty of inductive thought; the universal diffusion of fruit-trees, in poor men's gardens, demonstrates the mild and intelligent character of the succeeding age; and, finally, the growth of the pine, proclaims the present greatness of Britain, and indicates a host of blessings which she has derived from her unbounded interchanges of the necessary and luxurious products of every nation, tongue, and people.

We shall now take a brief review of the September fruits, with a

few remarks upon each, such as we trust will assist in adding the pleasures of understanding to the enjoyment of sight and taste.

APPLE (*Pyrus Malus*). The apple is the most durable of fruits, and flourishes in all northern latitudes. It is a close attendant upon civilization, and by a long course of ingenious cultivation, has been divided into twelve hundred varieties. France, till very recently, taking the precedence of England in all matters of mind, has the honour of having originated most of the varieties, and hence the names of the different sorts of apples are chiefly derived from the French. In the reign of Charles I., apple orchards were first planted in Herefordshire, by Lord Scudamore, of Home Lacy; and now they are found in every garden and hedgerow in the country. They thrive so abundantly in the western counties, that Devon, Somerset, Worcester, and Hereford, almost exclusively engross the manufacture of cider. The crop, however, is a precarious one, and requires great practical skill and local knowledge, to turn it to profitable account. More than twenty thousand bushels of American and French apples are annually imported into this country.

THE PEAR (*Pyrus communis*). It is believed that the Romans brought the pear to England. Being a very luxuriant fruit, it has always been paid great attention, and was carefully cultivated by the monks. As in the case of the apple, the French have, also, the honour of originating the best varieties of the pear. At present nearly seven hundred sorts are enumerated. The tree is very hardy, and many a venerable specimen is still to be found rearing its tawny-coloured trunks amid the ruins of the chapter-houses and cloisters of departed priests. Perry is the product of the pear.

THE QUINCE (*Cydonia vulgaris*). The quince was first propagated in England, in the reign of Henry VIII. It is a handsome but not a very healthy fruit, and is used more for giving variety to the palling superfluities of the rich man's table, than for any useful purpose. In the reign of Elizabeth they had become common in the gardens of the nobility, and are now extensively grown in the south of France, for the manufacture of marmalade. Cultivation has produced eight varieties.

THE MEDLAR (*Mespilus Germanica*). The medlar is seldom eaten till it has partially decayed; when, by some, it is esteemed to be of an agreeable flavour. The tree has become a native of hedgerows in the warmer parts of the country, but is believed to have been originally imported from the south of Europe. Many varieties are cultivated.

THE VINE (*Vitis vinifera*). The cultivation of the grape is coeval with the race of man. Traces of its history are discoverable in the records of every ancient nation. We read of Noah beginning to be an husbandman, and PLANTING A VINEYARD—Gen ix. 20. Egypt deified its first cultivators; and in later, but now vastly distant times, Bacchus and his brutal satellites became the disgusting patrons of its prostituted virtues. Humboldt is of opinion, that the original plant from which the European stock has been derived, grows wild on the shores of the Caspian Sea, and that from thence it passed into Greece, and successively into Sicily and the south of France, from whence it was carried by the Romans into Germany and Britain. It continued to flourish here till the thirteenth century, when large vineyards were planted, and soon became common over the country. Large quantities of wine were manufactured, and formed the common drink of the country, till after the reformation, it was superseded by ale, when the vineyards were suffered to go to decay. Grapes are cultivated over the whole of the temperate and part of the tropical zones of the northern hemisphere. Different nations have different methods of training the vine; some upon horizontal trellis-work, others in festoons between upright poles, and others again fasten them to the face of a wall. The Persian vine-dressers train it up the surface of a wall, and to curl over the top to the other side, which they do by tying a stone to the end of the tendril. This may probably illustrate Jacob's blessing upon his darling son—GENESIS xlix. 22, *Joseph is a fruitful bough, even a fruitful bough by a wall, whose branches run over the wall.* The vine, particularly in Turkey and Greece, is frequently made to encircle a well, which it shades in a very picturesque and agreeable manner. The vine lasts to a great age, and frequently grows to an enormous size. A tree remarkable for both particulars is now growing at Hampton Court, it covers an extent of 1694 feet, and seldom bears less than two thousand bunches annually. The different sorts of vines are almost as various as the places in which they grow. Among the Romans,

Virgil declares, “the number of vines was so great, that a man might as well attempt to count the sands on the sea-shore, or the billows of the ocean in a storm, as make a catalogue of them.”

Upwards of eight thousand tons of raisins are annually imported into England, at a duty of about 150,000*l.* The currants of the grocer's shops, of which nearly six thousand tons are yearly consumed in this country, are small dried grapes, chiefly the produce of the Ionian islands.

THE ELDER (*Sambucus nigra*). This tree is a native of Great Britain. It grows with such rapidity, that it will sometimes make shoots of ten feet in length in one season. A very agreeable and sedative wine is fermented from the berries, and forms a large addition to the poor man's comforts. Every part of the tree furnishes a recipe to the village herb-doctor, and many highly useful ones to the regular physician.

THE MELON (*Cucumis melo*). This delicious fruit is usually understood to be a native of Central Asia. The Romans were exceedingly fond of it, and used forcing-stoves for their cultivation. Its introduction into England is unknown; but its regular cultivation has been recorded since the time of Elizabeth. The Melon is difficult of digestion, and is in many other respects an unhealthy fruit. The colours of many of them are gorgeous beyond description, and would amply repay a close inspection. Nearly eighty varieties are cultivated.

THE CUCUMBER (*Cucumis sativa*). The Cucumber, like the melon, and other members of the gourd family, is, chiefly, a native of the burning countries of the east, where, by a kind arrangement of Providence, it serves, by its fragrant juiciness, to correct the inflammatory thirst of the parched inhabitants. It has been produced in this country from the earliest periods, but was not subjected to regular cultivation till the time of Elizabeth: many varieties have been the result.

THE PEACH and NECTARINE (*Amygdalus Persica*). Of the Peach, independently of minor differences, there are two distinct varieties, the peach and the nectarine: the former with a downy coat, and the latter with a smooth one. The identity of these two varieties has been well ascertained, the difference originating by culture. The Peach is a native of the tropical regions; and was brought from Persia into Europe by the Romans. It was first cultivated in England during the reign of Henry VIII., and under the improving care of the horticulturist has, at the present day, reached the number of two hundred varieties. It thrives abundantly in North America.

THE APRICOT (*Prunus Armeniaca*). The Apricot is a native of Persia, where it is called the “seed of the sun.” It has steadily followed the steps of civilization, and is abundantly found over all the various regions of the northern hemisphere. Woolf, the gardener to Henry VIII., a man whose wonderful exertions in the improvement and introduction of fruits, entitle him to imperishable gratitude, first brought the apricot to England in 1524. Many varieties woo the capricious appetite.

THE PLUM (*Prunus domestica*). The Plum is a native of Asia, but is now plentiful all over Europe. In obedience to that improvable principle which all vegetables possess, it has rewarded the patient labours of the gardener, by presenting him with nearly three hundred luscious varieties. The Orleans Plum is a proud monument of the early greatness of France; and most of the other sorts are bright witnesses of her beneficent labours. The prunes, or “pruants” as they are corruptly pronounced, are dried French plums, and are largely imported.

THE WALNUT (*Juglans regia*). The Walnut tree is one of the finest ornaments of a British farm, and is as useful as beautiful. The ripe nuts, as all those who love “wine and walnuts” can tell, are an agreeable fruit; and the green nuts, pickled, add a rich gusto to the national dish—a beef steak. A fine oil is also extracted from them. The Walnut is believed to be a native of Persia; and has been common in this country since the Roman conquest.

THE CHESTNUT (*Castanea vesca*). Chestnuts are chiefly grown for the winter food of deer. The nuts are very farinaceous, and are capable of being manufactured into bread. On the continent a light pastry is made from them. The Romans, of whom it has been said, that they adopted every useful art or product of the countries they conquered; and a higher eulogium was never pronounced on any nation—these unprejudiced heroes first brought the chestnut into Europe.

THE HAZEL-NUT (*Corylus avellana*). The Hazel is a native of

Britain; but, like the pigeon, the horse, and every other living thing which has been found serviceable to man, it has shot forth under his stimulating care, into large and durable varieties. The fibret, the cluster-mat, and many others, are the honours which surmount the sweet-wreathed brows of our ancestors, and proclaim to all the world, that by virtue of his immortal principle, man has not held an *unfettered* dominion over the vegetable empire, and that the world is so contrived, that well-directed industry cannot be exerted without large and profitable results.

We cannot close this account of the September fruits without asking a question.—Is there a flavour which it is possible for the healthiest and most cultivated palate to conceive, which is not to be found in nature? We believe not.—The palate is infinite in its perceptions—the imagination is equally illimitable, and nature running in parallel lines with them both, offers a *boundless* sphere for their united operations. Vegetables contribute the largest store to this inexhaustible fund. But why has this infinity of flavours been given to man—why have the *pleasures of taste* been SUPERADDED to the act of eating!—The goodness of God, is the spontaneous answer.—Wonderful! that that stupendous Being who can know no motive but his own, should have condescended to *please* the appetite of a wretch, who frustrates the end of his being, and blots the fair page of creation by gluttony and drunkenness. A hog knows better.

WILD PLANTS.

Nor are the Plants, which Britain calls her own.
Few, or unlovely.

MASON.

He who would acquire health and wisdom by a study of the unsophisticated “flowers of the field,” may still find ample employment: indeed, green nature is never at any season so barren in her favours as to leave the man who woos her “in sincerity and truth,” destitute of thinking materials—she is essentially inexhaustible—her gifts are always infinitely abundant; and he, therefore, who violates her beneficent laws, commits an infinite offence. Ingratitude is always measured by the extent of the obligation.

The fields, the woods, the mountains, and the “resounding shores,” are still alive with floral beauty; wild fruits are also in abundance.

Berries

That blush in scarlet ripeness through the dew,
every where regale the satiated eye, and give a sense of “fullness”
which belongs to no other month.

The following is a brief catalogue of the floral exhibitions of September.

Bedstraws. *Galium pusillum*

- *mollugo*
- *scabrum*
- *verum*
- *boreale*

These plants are well worthy of minute attention; they possess a surpassing delicacy of form, and are the prettiest miniatures of the season.

Soapwort—*Saponaria officinalis*. Hedgerows, &c. Bruised, and agitated with water, it raises a lather like soap.

Meliot—*Trifolium Meliotus*. Meadows.

Tansy—*Tanacetum vulgare*. Banks of rivers. Flowers going off—but still beautiful.

Horehound—*Marrubium vulgare*. Road sides. Much used by the Ancients as a medicine, but now such is the certainty of human knowledge, but little esteemed.

Horse mint *Mentha sylvestris*. Marshy places.

Spear mint — *viridis*. Banks of rivers.

Hound-leaved mint — *rotundifolia*. Watery places.

Round-headed mint — *hirsuta*. Ditches.

Water mint — *aquatica*. Banks of rivers.

Pepper mint — *piperita*. Sides of rivulets.

Red mint — *gentilis*. Swampy places.

Corn mint — *arvensis*. Moist corn-fields.

Pennyroyal mint — *pulegioides*. Moist pastures.

The mints are interesting both on account of their beauty and their usefulness: they abound with an aromatic oil, which is the essence of many of our best perfumes. Medicinally considered, they are remarkable for their tonic cordial, and stomachic virtues,

and, among the country people, are blessed as the mitigators of many an intolerable spleen. Botanists divide them into three kinds, those which bear flowers in spikes, heads, or whisks. It is beautiful to observe by what nice, but constant distinction, the identity of such close relations is preserved.

Vervain—*Verbena officinalis*. Waste places.

Red dead nettle—*Lamium purpureum*. Hedges, banks, &c.

White — *album*. Hedge-banks, &c.

Nettle hemp—*Galeopsis tetrahit*. Hedge-banks, &c.

Ivy-leaved snapdragon—*Antirrhinum Cymbalaria*.

Toad flax — *Linaria*.

These plants, which so beautifully embellish our hedge-banks, and contribute so largely to the pleasures of even the shortest walk, deserve close examination. Friends should know each other.

Wormwood—*Artemisia maritima*. Sea shore.

Ladies Thistle—*Carduus marianus*. Sides of fields.

Burdock—*Arctium Lappa*. Waste places.

Autumnal Dandelion—*Leontodon autumnale*. Meadows.

Common Groundsel—*Senecio vulgaris*. Fields and road-sides;

Clammy Groundsel—*Senecio viscosus*. Sandy grounds.

Ragwort—*Senecio Jacobaea*. Road-sides.

Flea-bane—*Inula dysenterica*. Moist meadows.

Mouse-ear Hawkweed—*Hieracium Pilosella*. Dry meadows.

Hawk's-beard—*Crepis tectorum*. Meadows and road-sides.

The above plants, with the exception of the Ragwort, are not very striking in their appearance, but as they characterize the season, and are members of a very extensive family, a knowledge of them would give a knowledge of the rest. They are now in abundant flower, and although not showy, are extremely beautiful. Nothing in the world is so little looked at as the flower of grass, but yet nothing is more elegant or instructive.

Orpine—*Sedum Telephium*. Pastures and hedges.

Water Honeysuckle—*Lycopus europaeus*. Banks of streams.

Meadow Sage—*Salvia pratensis*. Meadows.

Dwarf Mallow—*Malva rotundifolia*.

Common — *sylvestris*. } Road-sides.

Musk — *moschata*.

White Goosefoot—*Chenopodium album*. Common with other species, on dung-

Upright — *urbicum* } hills, rubbish, &c.

Green — *viride*.

Stinking — *olidum*.

Parsley—*Apium graveolens*. Marshes.

Bog Pimpernel—*Anagallis tenella*. Wet meadows and bogs.

Grass of Parnassus—*Parnassia palustris*. Moist meadows.

The plants here enumerated may be all found in the places indicated, and still in flower; the goosefoot tribe are very abundant, and in full flower; they are all so curious in structure, that we venture to say one careful examination of them, with an eye to the design of the Almighty in their creation, would wed a man to botany for life.

Traveller's joy—*Clematis Vitalba*. Hedges.

Wild Hop—*Humulus lupulus*. Hedges.

Blackberry-bush—*Rubus fruticosus*. Hedges.

Ivy—*Hedera Helix*. Hedges.

Meadow Saffron—*Colchicum autumnale*.

Saffron (of the shops)—*Crocus sativus*. Meadows.

The season is strongly characterized by the four first of the above-named plants, and curiously so by the two latter. The Traveller's Joy surmounts, and waves her white honours from almost every hedge; the hop frequently joins company, and produces a richness of picturesque effect, which equally baffles the pen to describe, or the pencil to depict. The blackberry-bush adds a low and varied beauty to the foreground of every landscape, and presents the agreeable spectacle of flowers in bud, and in full flower; and fruit both green, red, and black on the same bush at the same time. The Ivy has just put forth a profusion of blossoms, not only for the reproduction of its own species, but also for the food of thousands of birds who prey upon its berries in deep winter. The meadow-saffron, and the medicinal saffron are also extremely interesting to the intelligent observer, the former, from the singular circumstance of its sending up leaves only in the spring, which die down with the other crocuses, but never producing a flower till the following autumn; and the latter from the use of dried stigmas for medicinal purposes.

Jointed Glasswort—*Salsola herbacea*. Sea-shore.
 Sea Heron's Bill—*Erodium maritimum*. Sandy shores.
 Sea Starwort—*Aster Tripolium*. Salt-marshes.
 Sea Goosefoot—*Chenopodium maritimum*. Sea-shore.
 Shubby-Orachs (*Atriplex portulacoides*) Sea-shores.

These plants are now in full flower on the sea-coasts, and together with other members of their own genera, and various allied species, give an agreeable variety to the monotonous aspect of marine sand banks. The enjoyment, however, is greatly heightened by "knowing all about them," which Botany teaches.

DISSEMINATION OF SEEDS.

September has been called the "shedding month." Life has now left most of the annual plants, and in those woody vegetables that exist through an indefinite period of years, the vegetative functions have ceased, and the exhausted reproductive organs are in a state of repose. It is in this condition, that they perform their last effort—the diffusion of the seed. It is not easy to conceive a more interesting occupation for a country walk, than an examination of the beautiful means by which nature so perfectly performs this important operation.

When a fruit attains perfect ripeness, various mechanical agencies come into operation for the dispersion of its disseminated seeds; and if these powers, which have been specially contrived for the purpose, were not exercised in their efforts, vegetation would speedily vanish from the earth. More than fifty thousand plants have been minutely described and named by botanists; and as the means by which vegetable seeds are dispersed, are different in every species, it follows that more than fifty thousand "sowing machines" must have been conceived, and made on the third creative morning. When we consider the widely different ends to be attained, in every individual case, arising from the habits of the plant, soil, seasons, &c. &c., what an awful notion it affords us of God's omniscience.

Some fruits burst into regular portions, for which definite joints and hinges must have been previously contrived; and as the action is sudden, the seeds are scattered to a considerable distance. Timbrels are so light and aerial in their texture, that those of a single plant admit of being spread over a whole nation.* Others are wafted by little feathery balloons attached to them; and many are actually furnished with membranous wings, which, when touched by a breeze, spin the seeds for miles. Rivers and seas float millions to their destination. Birds also, by feeding upon them, pass them unhurt through their digestive organs, and largely assist the universal diffusion. Heat carries up immense numbers of the cryptogamic seeds, along with the aqueous evaporation to the clouds, which waft them across oceans, and cover rocks and coral reefs with their first verdure. Different animals carry them away fastened to their skins, by means of hundreds of little hooks which cover them, and man himself assists in the same way, as any one may perceive, who, after walking through an autumnal wood, will be at the pains to look at his pantaloons before he brushes them. He will find the seeds of the bedstraws, or cleavers, of agrimony and others sticking to him in abundance, and which he has, perhaps, unknowingly carried with him twenty miles. The school-boy also, when he throws a "buzz," as he calls it, or more correctly, a burr (the hooked seed of the burdock), at a passing stranger, little thinks that he is performing one of the most important acts of nature.

CHANGE OF THE LEAF.

How sweetly pleasing to behold
 Forests of vegetable gold!
 How mix'd the many-coloured shades between—
 The tawny, mellowing hue, and the gay vivid green.

The widely-spreading champagne country, the tangled thicket, and the shady lane, are now "replete with incidental beauty." The living functions of the leaf are now rapidly ceasing, and as the vital juices withdraw themselves to the roots, a gradual decay of the

leaf follows; this exhibits itself in a variety of the most charming hues—death is buried in beauty. Greens, browns, yellows; reds, mingle together through the intervention of various intermediate tints, and a veil of harmonious glory tinges the fading scene.

—The fading, many-coloured woods
 Shade deepening over shade, the country round
 Imbrown; a varied umbrage, dusk and dun,
 Of every hue, from wan, declining green,
 To sooty dark.—

September, in reference to the change of the leaf, has been called the "landscape month," and it is now that all who have a "painter's eye" should be on the alert, to catch the evanescent colours of the woods. The leaves of the plane change to a tawny hue;—of the ash, pale yellow;—of the elm, subdued orange;—of the hawthorn, bright yellow;—of the willow, hoary;—of the beech, a fine nutmeg;—and, in point of all the trees none are so finely coloured as the birch;—ever variety is to be found in an individual, and an infinite variety actually, in each tree throughout the whole congregated wood. Nothing can equal the splendour of an oaken wood lit up by the evening sun in September.

CATKINS.

The Catkins of the hazel, birch, alder, and other amentaceous plants may be observed gradually developing themselves. It would be a pretty employment to watch their progress through the winter, with all their ramifications contrivances for preservation against frost.

COMPOSITE FLOWERS.

Every season is more or less characterized by the prevalence of some great vegetable family, and in this way the present month, and indeed, the whole autumnal season, is remarkable for the reign of the Compositae, or composite flowers, of which the thistle of the fields, and the Michaelmas daisy of the gardens, are familiar examples.

These flowers are constructed in such a marvellous manner, and exhibit such extraordinary variation, upon the same type, that a knowledge of them could not fail of adding largely to the enjoyments of any of our town readers, who may not have had the good fortune of their previous acquaintance. They grow abundantly in every situation; and those which are now in flower are known in the country by the names of hawkweeds, hawk's-beards, burlocks, thistles, goldylocks, wormwoods, everlasting flowers, ragworts, starworts, golden-rods, chamomiles, yarrow, &c. &c. In the gardens, dahlias, china-asters, Michaelmas daisies, marigolds, sunflowers, &c. &c., are of the same natural order.

FUNGISSES.

In the present month, the surface of the country begins to be covered with decayed vegetable matter, and if its putrescent effluvia was suffered to mingle with the atmosphere, consequences destructive to life would result. But God, faithful to his purpose in creation, calls, at this season of the year, innumerable myriads of fungi and other cryptogamic tribes into existence. These live upon rotting vegetation, and wherever that is to be found in the greatest abundance, there they are also to be found in the greatest numbers: so perfectly are the number of workers, and the quantity of work proportioned to each other. Mushrooms, toadstools, puffballs, fairy money-jars, moulds, &c. are common examples of these interesting tribes. The woods are now filled with them, and to rise early and go abroad to gather them, is a favourite occupation of village children. Let our readers imitate this healthy example; let them pick up the first decayed leaf they find, and we will stake our credit upon its being found covered with vegetable wonders;—once in the woods they will not know how to leave them,—in every direction they will discover fungi of strange construction, some with colours rivalling the rose, and some from nearly foot in diameter to the size of a pin's head, and less. Fairies are caused by the circular growth of fungusses.

* Three hundred and sixty thousand seeds have been counted on a single tobacco-plant, and the gills of a single mushroom have been computed by Fries to contain above ten millions!

THE
GUIDE TO KNOWLEDGE.

EDITED BY MR. W. PINNOCK,

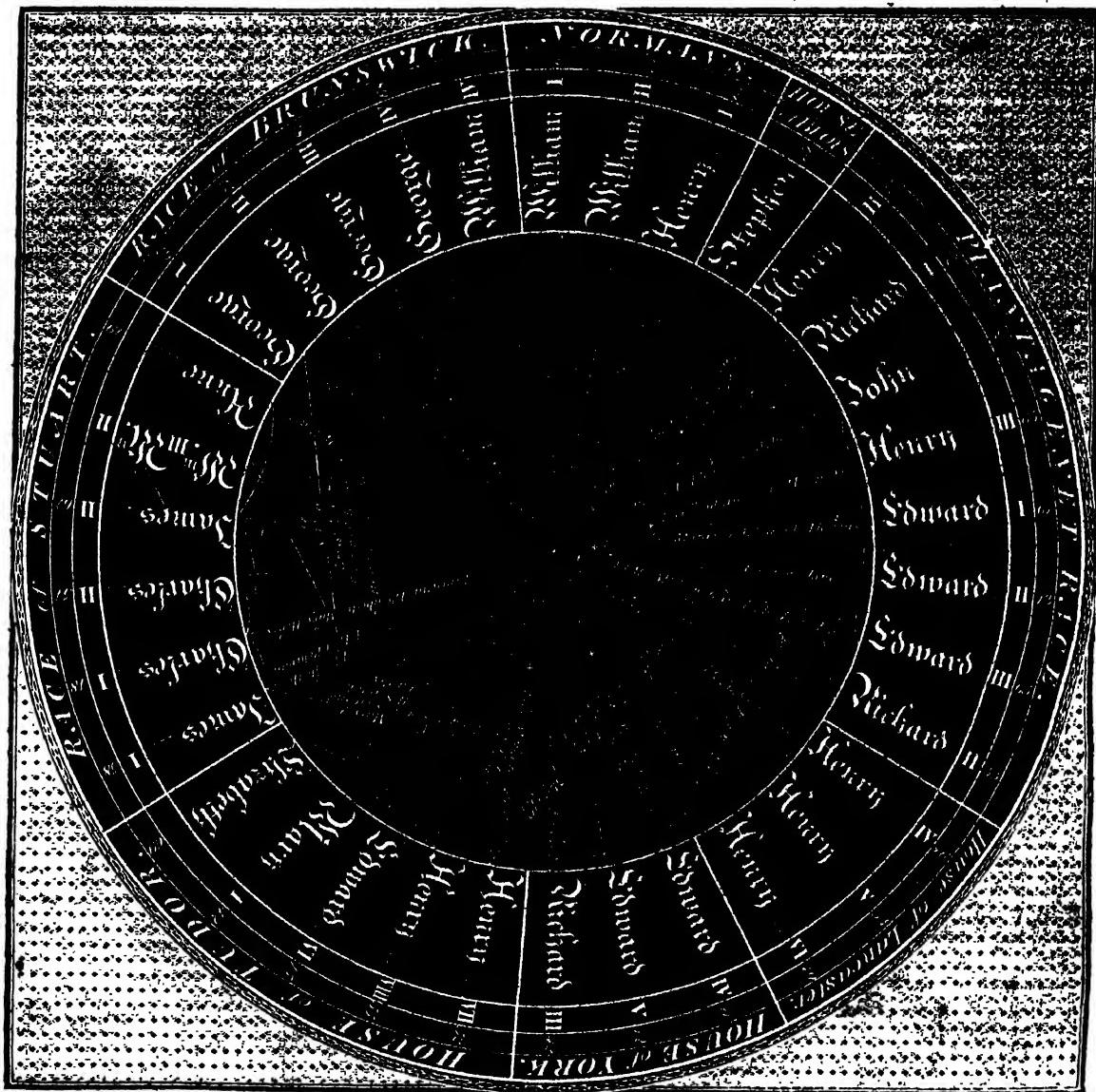
AUTHOR OF "PINNOCK'S CATECHISMS," "GRAMMAR OF GEOGRAPHY AND HISTORY," ETC., ETC.

No. XII.

SATURDAY, SEPTEMBER 8, 1832.

**PRICE
ONE PENNY.**

GENEALOGICAL CHART.



KEY TO THE CHART.

THE above CHART is intended as a companion to the "HISTORY OF ENGLAND" as given in Numbers VI., VII., and VIII. of this work, and which, it is presumed, will be found a *desideratum*. Its object is to assist those who are beginning to study the history of their native country, so as to enable them to trace readily

• VOL. I.

the genealogy of its kings, and to show their right of succession to the crown.

The reader will observe, that the outer circle shows the different houses from William the Conqueror to William IV., his present Majesty; the next circle, the age of each king respectively; the third circle denotes the number of each name; and the fourth,

the names of the kings in succession; the curved lines show the *lineal** descent, the oblique lines, the *collateral*.†

The dotted lines running from each king to the centre of the Chart contain the names of the children of each respective king.

CONVERSATION ON THE HISTORY OF ENGLAND.

(Concluded from page 64.)

HOUSE OF LANCASTER.

Q. How many kings of England were there of the House of Lancaster?

A. Three; viz., Henry IV., Henry V., and Henry VI.

Q. Who was Henry IV., the first king of the House of Lancaster?

A. Henry IV. was the grandson of Henry III., by his fourth son, John of Gaunt, Duke of Lancaster.

Q. When did Henry commence his reign? How long did he reign? and by whom was he succeeded?

A. Henry IV. commenced his reign A.D. 1399, and reigned to A.D. 1413; when he was succeeded by his son Henry V.

Q. How long did the House of Lancaster reign? and by what House succeeded?

A. The House of Lancaster reigned from A.D. 1399, to A.D. 1461, when Henry VI. was deposed, who was succeeded by his cousin, EDWARD IV., the first of the House of York.

THE HOUSE OF YORK.

Q. How many kings of England were there of the House of York?

A. Three; viz. Edward IV., Edward V., and Richard III.

Q. Who was Edward IV?

A. Edward IV. was a descendant, by his mother's side, of Lionel, Duke of Clarence, second son of Edward III.; who reigned from A.D. 1461 to A.D. 1483, when he was succeeded by his son, Edward V.

Q. When did the House of York commence its reign? How long continued? And by what House succeeded?

A. The House of York commenced its reign in A.D. 1461, and closed it by the death of Edward IV., A.D. 1483, when he was succeeded by the Earl of Richmond, known by the title of Henry VII., who was the first of the

HOUSE OF TUDOR.

Q. How many Sovereigns were there of the House of Tudor?

A. Five; viz. Henry VII., Henry VIII., Edward VI., Mary the first, and Elizabeth.

Q. Who was Henry VII?

A. Henry VII. was the son of Margaret, a descendant of John of Gaunt, Duke of Lancaster, and Edmund Tudor, son of Owen Tudor, a private gentleman, by the widowed Queen of Henry V.—Henry VII. reigned from A.D. 1485 to A.D. 1509, when he was succeeded by his son Henry VIII.

Q. How long did the house of Tudor reign, and by what house succeeded?

A. The house of Tudor reigned from A.D. 1485 to A.D. 1603; when, upon the death of Elizabeth, she was succeeded by JAMES I. of the "house of Stuart."

HOUSE OF STUART.

Q. How many kings were there of the house of Stuart?

A. Six, viz., James I., Charles I., Charles II., James II., William and Mary, and Ann; but the line of succession was interrupted between

the reigns of Charles I. and Charles II. by the Commonwealth, and the usurpation of the protectors, OLIVER CROMWELL and Richard, his son.

Q. Who was James I?

A. James I. was the sixth king of Scotland of that name, son of Mary Stuart, queen of Scotland, and third cousin to Elizabeth. He reigned from A.D. 1603 to A.D. 1625, when he was succeeded by his son Charles I.

Q. How long reigned the House of Stuart? and by what House succeeded? and when?

A. The House of Stuart commenced its reign A.D. 1603, and closed it on the death of Anne, in 1714, when she was succeeded by her third cousin, GEORGE I., who was the first king of the

HOUSE OF BRUNSWICK OR HANOVER.

Q. Who was George I?

A. George I. was the son of the Princess Sophia of Brunswick, grand-daughter of King James I., and Ernest Augustus, first elector of Hanover. He reigned from A.D. 1714 to A.D. 1727, when he was succeeded by his son, George II.

Q. How long did George II. reign, and by whom succeeded?

A. George II. reigned from A.D. 1727 to A.D. 1760, when he was succeeded by his grandson, George III., who died A.D. 1820, who was succeeded by our late king, George IV., who died A.D. 1830, when he was succeeded by his present Majesty, WILLIAM IV.

GEOGRAPHY AND HISTORY OF THE WORLD.

FROM THE TIME OF THE ISRAELITES GOING OUT OF EGYPT, B.C. 1491, TO THE FOUNDATION OF ROME, B.C. 753.

(Continued from page 77.)

PHENICIA, once greatly noted for its extensive commerce, was bounded on the north by the river Eleutherus, on the east by Cœlo-Syria, on the south by Palestina, and on the west by the Mediterranean.

Its most remarkable places were Sidon, Tyrus, and Sarepta. Phenicia extended along the coast of the Mediterranean, from Seleucis, from which it is separated by the river Eleutherus, to Palestine Proper, or the country of the Philistines (POLEMY). In the Greek and Latin writers it is written Phœnice, with one exception only, and that is VARRO, who writes Phœnicia. In Scripture, they are called Canaanites.*

This country is considered so noble a part of Syria, as sometimes to be put in opposition to it, or mentioned as distinct from it. (STRABO).

The Phenicians have added great lustre to their country. They were a very ingenious people, excelling both in the arts of war and peace, inventors of letters (*Lucan*); and other arts, especially of Navigation (*Mela*); Astronomy, or knowledge of the stars, as far as was subservient to the purposes of navigation (*Dionysius*).

They were the only merchants in the world (*Sophocles*); sent out colonies to all the coast of the Mediterranean (*Strabo*); and even ventured to sail out of the Straits (*Mela*).

SIDON was built by Sidon, the eldest son of Canaan, and Tyre was the residence of King Hiram, friend to David and Solomon, to whom he sent workmen and timber from Mount Lebanon to build the Temple of Jerusalem.

PALESTINA, or Palestina, properly denotes the country of the Philistines. This country comprised what has had the se-

* Allied by direct descent, as the son from the father, &c.

† Applied to relations of the same house, but not in the same line of ascendants and descendants; such are uncles, aunts, nephews, and cousins.

* The word Canaan, in the Hebrew language, signifies Merchant.

veral names of *The Land of Canaan, The Land of Promise, The Land of Israel, Judæa, and lastly the Holy Land.*

Before its conquest by the Jews, this country was divided into several petty kingdoms; after the conquest, into *Twelve Tribes*; after the death of SOLOMON, into the kingdoms of *Judah* and *Israel*; and about the birth of Christ, into several petty states, orroyalties; which soon became provinces of the *Roman Empire*. The Geography of this country and its confines of Egypt, Grecia, Italia, Arabia, Asia Minor, &c., will be more particularly described in our future numbers.

The KINGDOM OF ISRAEL, which is noticed in this period, comprised the *Ten Tribes* after their revolt from the House of David. The Kingdom of Judah, compared to that of Israel, was but of small extent, consisting only of two Tribes, BENJAMIN and JUDAH.

That very remarkable event, which closed the preceding period; viz. the ISRAELITES going out of EGYPT, where they had lived in bondage a period of 400 years, is not noticed by the *Egyptians*, whose general history of this period is plunged in the deepest obscurity.

In process of time, the kingdoms of Assyria and Babylon were united, which, together, formed the basis of the great *Assyrian Empire*.

(To be continued.)

ON THE ORIGIN OF NATIONS.

FIRST OF BABYLONIA, OR BABYLON: ASSYRIA, EGYPT, GREECE, ETC., ETC.

At this period, when very little of the history of other nations is known, the improvements of mankind in the necessary arts of life were advanced to a considerable degree of perfection. But it is necessary to remember, that all the nations of the earth were far from being equal in their mental acquisitions. Some of them were sunk into the abyss of ignorance and wretchedness; while others lived under good and proper governments, and enjoyed all the benefits of a well regulated society.

NOAH, who was acquainted with all the learning of the antediluvian patriarchs, disseminated those seeds of science among his offspring. But those who wandered far from their native seat, and were wholly employed in procuring subsistence, had neither time nor inclination to cultivate the tender shoots of knowledge; hence they were neglected and forgotten. While others, who continued near the plains of Shinar, and long enjoyed the councils and directions of their great ancestor, formed themselves early into regular societies, and wisely cultivated the arts of peace.

The antediluvian patriarchs were no strangers to agriculture; they were obliged to till the ground for their subsistence; and NOAH himself was no sooner settled after the flood, than he planted a vineyard, a sufficient proof that the art of husbandry had been carried to some degree of perfection. Corn was cultivated in most parts of the east, the *Land of Canaan*, where Jacob resided, produced large quantities; it was the principal food of the inhabitants; for when an unfruitful season had blasted the harvest, Jacob was obliged to send to *Egypt* to purchase corn for his family. Nor was the art confined to the cultivation of corn; the fig, the almond, and the olive trees were well known in *Palestine*; and the present which JACOB sent to his son JOSEPH, consisted of balm, honey, myrrh, spices, nuts, and almonds. The cultivation of the ground gave rise to commerce. An exchange of commodities is the natural consequence of improvements. The shepherd will give part of his flock for corn; and the husbandman exchange his produce

of his fields for cattle. In this manner, Commerce must have been carried on in its infancy. It must have arrived at some degree of perfection before metals were introduced as the medium of trade; and yet this was the case so early as the days of ABRAHAM. The money then in use had not indeed any stamp to ascertain its value, or its fineness. It was delivered by weight. But as commerce increased, this method was laid aside, and the pieces of silver were marked to ascertain their value.

In the time of JACOB, a regular commerce was carried on between *Egypt* and *Arabia*. The *Ishmaelites* and *Midianites*, to whom JOSEPH was sold^{*} by his brethren, were merchants going into *Egypt* with their camels loaded with spices, balm, perfumes, and other rich merchandise. We may also infer from this passage, that refinement was arrived to a very considerable height in *Egypt*; for the commodities brought by those foreign merchants were luxuries, not the necessities of life; things never thought of in the infancy of kingdoms; the Arts must have made a considerable progress among a people, before they think of luxuries.

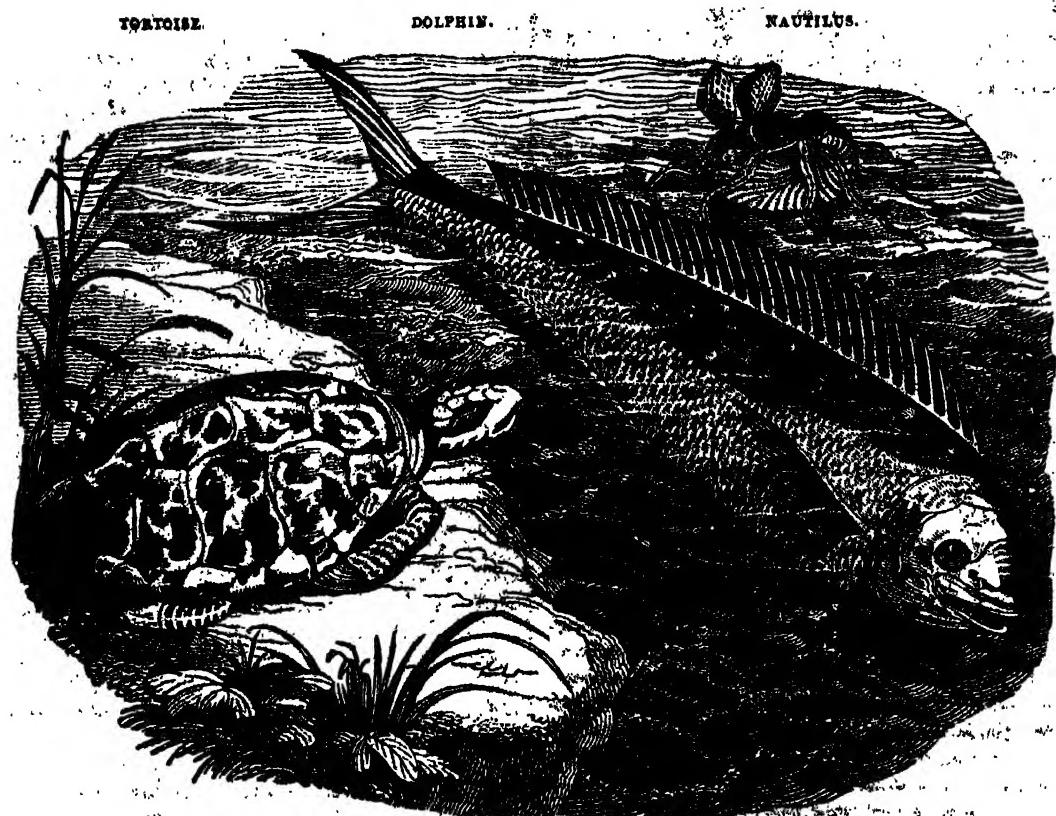
This Commerce was carried on, however, only by land, and must therefore be distinguished from that carried on by sea. The former was known much sooner than the latter; though, in all probability, Navigation was not unknown even to the *Antediluvians*. But, however that be, the inhabitants of *TYRE* were the first people who rendered navigation subservient to Commerce. Situated in a barren soil, where the arts of agriculture could be of little advantage, they wisely endeavoured to render their situation more agreeable, by cultivating the arts of peace. Commerce opened the fairest prospects, and was pursued with great attention and success.

The TYRIANS were famous for their Commerce in the days of ABRAHAM;† and JACOB mentioned it in his last blessing to his children.

But wherever Commerce is cultivated, the other arts will flourish. It cannot, indeed, be carried on without some knowledge in Navigation and Astronomy. In those early times, the Mariner had no other guide than the heavenly bodies; the Mariner's Compass was then unknown. The situations, positions, and revolutions of the heavenly bodies were indeed observed in very early times; ASTRONOMY was cultivated in the reign of *Bulus*; and the Egyptian priests were observers of the Stars. GREECE was indebted to EGYPT for the elements of the Sciences; the celebrated philosophers of that country were instructed by the Egyptian priests. It was from them that Pythagoras learned the "True System of the World." To the Greeks, the Romans were indebted for many of the arts relative both to peace and war; and to the Romans the inhabitants of Europe, owe their politeness and refinement. EGYPT has therefore, not improperly, been styled the "Mother of the Sciences."

One of the most celebrated kings of Egypt was SESOSTRIS, during whose reign that kingdom arrived at an amazing height of power; it was adorned with the most splendid cities, and was very full of people, n. c. 1839. This prince is said to have been master of 400 sail of large ships, with which he sailed down the Red Sea, conquering all the islands and sea coasts as far as India. He had also an army of 600,000 foot, 24,000 horse, and 27,000 armed chariots. He conquered *Ethiopia, Phœnicia, Syria*, and all the *Lesser Asia* (or, *Asia Minor*); and passed over into *Europe*, and subdued the *Thracians*.

(To be continued.)



WONDERS OF NATURE.

WONDERS OF THE DEEP.—No. III.

CORYPHENE, LOGGERHEAD TURTLE, NAUTILUS.

CORYPHENE.

THE CORYPHENE, of which the fish in the figure is a representation, is a fish of some celebrity, and of a great deal of beauty. It is strictly a *Pelagic* fish; that is, a fish of the open seas, in the deep water, and not of the shallows, the shores, or the banks; so that, as is the case with all the fish that have the same habitude, its manners are very imperfectly known. It is found swimming near the surface with great rapidity, and as it is alternately dis- closed and hidden by the ripples on a sunny day, and with a fine mackerel breeze, it is one of the gayest productions of which nature can boast. At a certain depth, and in the direct light of the sun, it is of a pure golden yellow, and glows through the waves like burnished gold. But its colours vary with the position of the light, the depth of water, and other circumstances, so that as it dashes along, it is now gold, now ruby, now sapphire, now emerald; and anon it is all opal and rainbows. It is found from four to six feet in length, and its shape is handsome and indicative of vigour. It can play round a ship when making considerable way; and as it is very voracious, it will attend for any garbage, or may be easily taken by means of a bait. It commits terrible havoc among the smaller fish, which, in favourable states of the weather, swarm near the surface of the warmer seas. It is found in the Mediterranean, but rarely in the temperate parts of the Atlantic. It is the DOLPHIN which is fabled to have borne

ARION on its back; and it is also the prototype, so far as there is a prototype, for the fabulous dolphin of antiquity. The common dolphin is not a fish, it belongs to the mammalia, being one of the whales that have teeth in both jaws. There is little beauty of colour about it, or indeed about any of the sea animals that suckle their young. It is true that the gelatinous matter with which the skins of all, and the shells of most sea animals are covered, and which defends their bodies from the chemical action of the water, and also enables them to make their way through the water with greater facility, does show prismatic colours when it is in the act of drying. But those colours are very faint in all the whale tribe. It is worthy of remark, that the play of prismatic colours is most conspicuous on those fish that are most near the surface whether they be natives of the shores or the wide sea. Mackarel and herrings are splendidly coloured fish, as compared with soles and flounders, which lie grubelling in the mud. It is well known that thin plates of semi-transparent matter applied closely to each other, without any air between, produce prismatic colours. The lustre of pearls, of pearl shells, of opal, of Labrador feldspar, of cracked ice, and sometimes of cracked glass, if the body of it be thick enough, are all owing to thin plates, or a succession of surfaces, that are neither absolutely opaque, nor absolutely transparent. It is highly probable that the colours of these surface fishes are produced by the successive drying of thin pellicles of this gelatinous or slimy matter upon them; and that is rendered more likely from the fact that the under sides of fish have always less colour than the upper; and that the under sides of those that lie in the cold hollows are almost invariably white. The egg of the turtle is white; and when the young first come out, their

coats are white, or rather transparent. After the exophene is out of the water, and while it is drying, the play of colours upon it is very beautiful. The same is the case with the mackerel, and partially also with the herring; but when the fish has been once dried, the colours are not again revived.

LOGGERHEAD TURTLE.

The loggerhead turtle (*testudo caretta*) has some resemblance to the green turtle; but the head is larger, the shell broader, and the colours more intense. There are also two more pieces in the back plate, and the fore legs are longer and the hind legs shorter in proportion. It is much more active than the green turtle, and ranges over a much greater extent of latitude. It is by no means uncommon in the Mediterranean, nor merely on the coasts of Africa, but on those of Italy and Sicily. The flesh is tough and harsh, though eaten by the poor. The shell, too, is thin, dull, and of little value, though the Italian whalers sometimes use it for veneering. The principal value of the animal is for its oil, which is abundant, considerably superior to whale-oil, and some suppose it would answer well for the dressing of leather, for which cod-oil, made from the liver, is chiefly used in this country. The eggs of the loggerhead are more palatable than the flesh.

The loggerhead is as formidable and fierce as the green turtle is gentle and inoffensive. Its jaws are very hard and strong, when they come together with much force. They are, however, well adapted to its food, the principal part of which is smaller animals, and it can easily break the hardest shells. It can also strike and scratch with its long fore legs, which have strong claws projecting beyond the webs of the toes. It will snap at a stick or any other object with which it is threatened; and its hold is so firm that it will break a thick stick, or bend a rod of iron. It is exceedingly difficult to get it to quit its hold after once it has been taken; and it is commonly said that the "loggerhead" continues to bite after it has been separated from the body. The hold which, in that case it retains, is not the stiffness of death, for the head of any tortoise lives for some time after it has been cut off.

These animals are formidable in size, too, for it has been said that some weighing 1500 or 1600 pounds have been met with. They also swim with more rapidity than the green turtle, being much more frequently met with "on the high seas." When young, they have so great a resemblance to the green turtle as to lead to a suspicion that the specimens met with on the western coast of France, and described as green turtle, were in fact loggerheads; because green turtle have not been found in the Mediterranean, the shores of which have a much more tropical character than the coast of France. It is probable that all the green turtle described as being found far out at sea, were in truth the species now under consideration. As a grazing animal, the green turtle is not likely to go often or far to places where it can find no bottom, while the loggerhead, a devourer of flesh, can range the ocean at its pleasure. In Europe this turtle is not often found to the north of the Mediterranean, and in America it is seldom found to the north of Florida. As it has not the same charms for the palate of the epicure, its habits, though it has been much longer known, have not been so much studied as those of the other.

THE NAUTILUS

The depths of the sea are most mysterious places. There is no knowing what may be in them, except from the specimens which are now and then brought to the surface, and we have no means of ascertaining how small the known part is as compared with that part which the overwhelming waves will not reveal. Of the shells that are found on the beaches, more especially in the warm

latitudes, there are very many, and these the finest of the whole, that have never been seen with the animals in them, either dead or alive. These are usually supposed to be washed out of the depths by the action of under currents; and that is rendered probable because they are met with in the greatest abundance at those places where currents from the deep sea form eddies, but from what place of the deep they come, or what are their habits, we have no means of knowing. We do not even know how far animal or vegetable life extends below the level of the mean surface. In some of the tropical seas, we can see the peopled bottom at a great depth, and in the coral reefs, we find that molluscan animals, which are absolutely too small for being properly examined by the eye, even rear their "walls and bulwarks" fathoms and miles in length, and to a height far exceeding the depth to which our deepest plumbets ever sound. But what of vegetation, or what of larger animals may be there, or what may be at a depth greater still, we cannot know, and it would be vain to conjecture.

One of the most singular of those deep-sea shells is the Nautilus, one species of which, the paper nautilus, is figured in the above cut. That shell has afforded to the romancers in ancient history, who are the most mischievous of all romancers, the groundwork of a very pretty fable. "When the water is calm," say they, "the nautilus rises to the surface, spreads her mantle, spreads her gills, stretches her oars, and walks the water, really a thing of life; but when the wind beats and the waves are up, she takes in her sails, lowers her mantle, and descends to those regions of tranquillity which the action of the waves never reaches." All that is very pretty, and, if true, it would be very fine; but, unfortunately, the animal which is found in the shell of the nautilus, is not the natural owner of that shell. The shell is a dead one, and the animal found in it has really no more connection with it, than the sailor has with his ship; not indeed half so much, because the sailor may have made and can repair the ship, whereas the owner of the shell neither made it nor can repair it. There is only one author who says that he saw the living animal of one species of nautilus; and as he is in some other matters a romancer, there is reason to suspect that he is a romancer in that.

Let those shells, and other genera nearly allied to them, must, at one time, have been very numerous, and very widely distributed. They are met with in countless millions in the earth in many parts of England, and other countries; and in the Himalaya mountains, on the north-east of India, they are met with at nearly four miles above the present level of the sea. Even there they have all the character of shells which are never now found in any situations, but where it is evident that they have been brought from deep water, the congregated multitudes must therefore have inhabited deep water, too. These shells have drawn the attention of men in all ages, with the Hindus they are the impressions of the god Vishnū, and considered holy, and worshipped. Among the Egyptians and Greeks they were the horns of Jupiter Ammon, from which they still retain the name of Ammonites; and their form has given rise to the Ionic volute, in architecture, and to various other ornaments. The preceding cuts represent a specimen entire, and also a section through the middle. We shall return to the subject at another time.

M.

THE HEAT OF SUMMER.

THOUGH we complain bitterly of the intense severity of the cold in winter, we are not more contented or better pleased with the equally intense heat of the summer. We complain of thirst, of lassitude, of a thousand painful and unpleasant feelings, and emphatically deprecate the continuance of the hot weather.

Complaints of this kind have their origin either in folly, or in most unpardonable selfishness. We are unaware of the indispensable usefulness of heat in maturing and perfecting the fruits of the earth; or, being aware of it, we consider that of less importance than our own personal and merely temporary feelings.

It is pretty certain that no one in his senses would seriously propose to give up all the products of the earth, in preference to enduring two, or at most three, months of hotter weather, than is to be endured during the remainder of the year; for this, after all, is the utmost real extent of that of which we make so many, such bitter, and such idle, because utterly useless, complaints.

The fact appears to be, that, while we complain of a trifling present inconvenience, we wholly lose sight of the immense importance to our future welfare of that heat which we complain of.

But for this, the unproductive seed would perish in the ground, and there would be no subsistence for man, or for those animals which perform for him the most laborious of his toils, and furnish him with the most nutritious of his food.

And, after all, the complaints that we, even in this temperate climate make, of what we term excessive heat and excessive cold, what are the inconveniences of our summers and winters to those which the inhabitants of other climates have to contend against.

In some parts of the world the inhabitants have to bear, during the whole of every year, a heat infinitely more intense than that which we experience in the very hottest of the short periods which constitute our summers. Yet, under a sun which we should deem absolutely intolerable, these people not merely bear their lives, but enjoy them. They are framed to endure the climate in which they are destined to exist, and they do not repine at the dispensations of the Deity.

Many of these people are what we, in our pride of superiority, think ourselves entitled to call savages and barbarians. It would be well if we were to exhibit a little greater, and boast a little less, superiority over them. We might, for instance, very advantageously copy their cheerful and uncomplaining submission to the will of God; and imitate them in forbearing to complain of that which we cannot alter, and which we could not by any possibility dispense with.

If the days of summer be, as it cannot be denied that they are, inconveniently hot, we have ample amends made for that inconvenience, by the delicious and refreshing coolness of the evenings and nights. There is in them a delightful and soothing softness, which restores our wasted strength, and diffuses a calm and indescribable luxury of feeling throughout our entire frames. Even were the whole of both the days and nights of Summer as hot and oppressive as some parts of some of the former are, we should be most unjust were we to complain of them; for we are but too happy to partake of those productions, in the perfection of which the heat of summer has so considerable and important an influence.

Of the advantages of the winter season, we have already spoken at a sufficient length, as to mere description. If we now recur to that subject, it is merely for the purpose of embracing an opportunity to observe, that the complaints which we make of the intensity of the cold of winter are, to the full, as thoughtless and unjust as those which we make of the intense heat of Summer. The severest of our ordinary winters is a positively mild and genial season, when compared to the winters of Lapland, and several other northern countries. In them the natives have to endure long months of severe cold and unbroken gloom, such as we cannot even picture to our imaginations. Yet they are cheerful, contented, and uncomplaining beings; nay, one of these countries is famous

for the extensive and general mental superiority of its inhabitants.*

If we were to search the whole habitable world we could not, perhaps, find a single country which presents so many and such important advantages of climate to its inhabitants as our own does. We are exempt from the excess of all the worst evils which peculiarities of climate inflict upon mankind.

It is true that the climate of England is variable, exceedingly variable. The weather is always uncertain with us, and sometimes the changes are so rapid and frequent, that in one single day we have great heat, inconvenient cold, torrents of rain, and a slight frost. These extreme variations, however, are very rare. Still, the characteristic of our climate is extreme variableness. Many persons have, in consequence, attributed to this variableness the extreme and fatal numberousness of cases of consumption. That it is partly attributable to this cause, would be both absurd and useless to deny; for no one would side with us in a denial so diametrically opposed to plain fact. But we are, nevertheless, inclined to believe, that by far the greater number of cases of consumption spring from the imprudence or the dissipation of the victims. Man's frame is greatly exasperated by a course of life so very artificial as that of our state of society. He, consequently, requires the utmost care, in order to the enjoyment of sound health.

But if he be reckless or negligent of the consequence of exposure to the elements in an exceedingly variable climate, it is not to be wondered at that he is reminded of his imprudence by painful and fatal illness.

As for those who exonerate their frances by indulgence in dissipation, no climate, not even the mild and genial climate of Italy, the ancient Mistress of the World, could ensure them health and long life; they fall victims and martyrs to their own imprudence; and however much we may lament their untimely fate, it is exceedingly improper to charge it upon our climate, when the real cause—their own misconduct—looks us full in the face.

WANTS OF MANKIND.

MAN is at once the most necessitous, and the most amply provided of all God's creatures. That he is so, admits neither of denial nor dispute. Compare a new-born infant with the young of any of the brute creatures; and how infinitely more helpless does the former appear than the latter! Naked, weak, without perception, shrinking from the blast, and gasping for nourishment, a newly-born infant is the very image of destitution and imbecility.

This helplessness is not a thing of a brief period. The young of the brute creation speedily perfect their bodily faculties and the instincts necessary to their comfort and preservation. But the

fancy, the imbecile infancy of mankind, is a long period indeed. During the first two years of a child's existence, he may be said to be utterly helpless. From that period he does, indeed, obtain the mastery of his bodily powers; but even then his mind is still but a gerim; a thing who is to be strong and luxuriant, but which will require very long and very careful cultivation to render it so.

Between the helpless infant and the talented and accomplished man, there is scarcely a more considerable difference than there is between savage and civilized man. The latter may be considered in the light of the infant, which is by long and slow degrees to arrive at the comparative perfection of power and wisdom of the latter.

* The country to which we allude is Iceland: the very name of this country indicates the character of its winters.

The beasts of the field have their caves and holes in which to find shelter, they have natural clothing appropriate to the situation in which they exist, and these natural instincts are abundantly adequate to the supply of all their natural wants. Turn, now, to savage man and behold how much less nature has done for him! How many arts must he invent and improve upon, how much must he endure of privation, disappointment, and fatigue; in short, how very many disadvantages of various kinds must he overcome before he can reach even the lowest degree of the comfort and enjoyment of civilization!

How much better situated are animals than men! So, indeed, we should exclaim if we took but one, and that, but a very imperfect view of the question... But we cannot forget, and we are very anxious that our readers should constantly remember, that man has two very important blessings of which the brute creation, for wise purposes, is left destitute—**Reason and Speech**. Let us not speak of, comparatively, petty and unimportant disadvantages without, at the same time, making due mention of these two great and glorious advantages; and feeling due gratitude to God for having conferred them upon us and upon our kind. In the possession of reason, that greatest of all the benevolent gifts of God, man has an ample store of resources for the supply of all his wants. The animals cannot increase the experience or the sagacity of their kind. The various animals of to-day have as much instinct, as the animals of the earliest creation; but have no more. And man is not only gifted with reason, which he can improve as to his own individual possession, but is gifted also with speech, by means of which the individuals of each generation can improve each other, and hand down their improvements to their latest posterity. It is thus, that man is continually progressing nearer and nearer to perfection. It is thus, that each age has the wisdom and the toil of all preceding ages, as the ground-work upon which to exert its own study and its own industry. If, instead of being gifted with the power to supply his various wants, his wants, like those of the brute creation, had been spontaneously supplied by nature without his exertion, and without his agency, it would have been neither better nor more agreeable.

Those of mankind, who, being placed beyond the reach of all wants, are in consequence deprived of the best stimulus to useful and agreeable exertion, and even of all that tends to purify the heart and soothe the feelings, are the most discontented and unhealthy, and spend most of their hours in misery, and both use and enjoy the time they live upon earth the least. The day is too long for them, for they have no business; the night is tedious to them, for they have not tasted that wholesome and moderate fatigue, which would render sleep beneficial to them. Thus, their days are spent in listlessness, and their nights in wakeful discontent; and, when the last day of life at length arrives, they, for the first time, learn the value of being able to live; and expire in an agony of regret for the days they have wasted, and desire for days which they are not ordained to behold.

Indeed, all man's happiest feelings, all his kindest and most delicious emotions would depart from him the instant that he should be deprived of those stimuli to bodily exertion—wants, real, or artificial.

We trust the remarks which we have made, brief as they necessarily are, will suffice to impress upon the minds of our young readers the important truth, that every thing ordained by our Creator, is ordained for the best. The longer they live, and the more they read, reflect and observe, the more strongly and convincingly will this truth impress itself upon them. It is a truth, which every thing by which we are surrounded is able to declare to us; if we will but observe what surround us, and receive truth when it is presented to us.

GALLERY FOR PRACTICAL SCIENCE.

MR. PERKINS, the American mechanic, who has contributed so largely to the stock of new discoveries since his residence in this country, has at last been fortunate enough to find some enterprising individuals disposed to put their merits to the test of practical experiment. The place selected for the exhibition of Mr. Perkins's inventions, and other works of practical utility, is in Adelaide Street, Strand.

The *Steam Gun, and Propelling Apparatus* for boats and ships at sea, appear to excite the greatest interest. With regard to the first it may be enough to say, that, in the event of its forming a part of modern tactics, it would assuredly put an end to all wars, by making the destruction of those who were engaged in them certain. The improved steamboat is also an invention of great value, as it produces little or no disturbance in the water, and, therefore, could obviate accidents from the back-water, now so much complained

WISE SAYINGS.

QUINTILIAN recommends to all parents the timely education of their children, advising them to train them up in learning, good manners, and virtuous exercises, since we commonly retain those things in age which we entertained in our youth.

Advice is offensive, not because it lays us open to unexpected regret, or convicts us of any fault which has escaped our notice, but because it shews that we are known to others as well as ourselves; and the officious monitor is persecuted with hatred, not because his accusation is false, but because he assumes the superiority which we are not willing to grant him, and has dared to detect what we desire to conceal.

There is nothing, said Plato, so delightful, as the hearing or the speaking of truth.—For this reason, there is no conversation so agreeable as that of the man of integrity, who hears without any intention to betray, and speaks without any intention to deceive.

True quietness of heart is got by resisting our passions, not by obeying them. Young persons should not only embrace the admonitions and instructions of the aged, but also imitate their virtues and shun their vices.

To be covetous of applause discovers a slender merit, and self-conceit is the ordinary attendant of ignorance.

Learn not to judge too rashly of any one, either in respect to good or evil, for both are dangerous.

KNOWLEDGE is the treasure of the mind; DISCRETION the key to it; and it illustrates all other learning, as the lapidary doth unpolished diamonds.

PHILOSOPHY OF THE STREETS OF LONDON.

THE TINKER.

HERE comes the Tinker, another of those many philosophers of the streets,—surgeon-general of pans and kettles in all the alleys and courts about town, as well as in all the villages in the neighbourhood. Yet, till the establishment of large manufactories, and the making of articles by wholesale, and the keeping of them in warehouses and shops, for the supply of those who wish to purchase, the tinker was a man of no small importance; and the people had to wait his pleasure before they could cook their dinner. A that time, if any one wanted a pan or a kettle, the plan was to send for the tinker, who travelled with all the materials and tools neces-



sary for his purpose; and, erecting his apparatus by the hedge-side in the summer, or in any shed or outhouse in the winter, the tinker worked away at blithe as a lark, well knowing that he should not be grudged his price, and a mug of ale to lighten his labour.

These were homely times compared with the present, and yet they had some advantages which the present times do not enjoy. The tinker of the old times performed (not so neatly, and certainly not so rapidly), far more operations than any of the workmen that now assist in making the same articles at the great manufactories; and though the articles which he made were not so light and fragile as those of the present day, and cost much more money, they were more durable, and perhaps cheaper in the end; so that they were really of more advantage to the poor people.

There was another advantage: the tinker, and the other men of the travelling workshop, learned to make the people themselves much more handy than they are now; and that was of far more advantage to them than would at first be believed. A labourer now, whether boy or man, has little opportunity of seeing the whole of any thing made; and, indeed, the mere workmen in the great manufactories are not much better; very much of the work is done by machines and tools which are expensive—far too much so for any poor man to purchase; and yet the poor man cannot make those common things which used to be made by the tinker without the machinery. Thus it is not the clever man but the *right man* that can become a master; and consequently those who have the best opportunities of improving both the materials and the articles are prevented from doing so.

Another thing: these part-workmen have no pride in the quality of what they do; for how should a man that merely punches the hole for the spout, or turns the button for the lid, care whether the entire tea-kettle be good or bad. The master-manufacturer, too, cares not one straw for the man who is to use the article;—all that he cares for is to get his article sold; and as that seldom has his name upon it, except it be a “patent” article,—which means nothing further than that he who holds the patent has been rich enough to pay fees in a certain office, in consequence of which he is allowed to make the patent article as bad, and sell it for as much money as possible, because any one who makes it better or sells it cheaper can be punished for so doing.

When the tinker went about in full employment, all the boys came about him to assist him with his little furnace and forge; and there they learned to do many things that were very useful. When the tinker was not at hand, there were many little articles that they could repair; and as the labour was voluntary, and they took pride in doing it, it gave them habits of industry and saved money to their parents at the same time. That which young people are ordered and compelled to do, is always a task to them, and they do no more of it, and continue no longer at it, than they can help. They may by use learn to do it faster mechanically; but the habit which even that begets, is not one of industry; it is the reverse—a desire to hurry through the work and get to something which is not a task. But then there is nothing of that kind to which they can turn themselves, even after their task is done; there is nobody to show them how to make the whole of any thing, and thus they acquire idle habits, and very often vicious ones, merely because they can get nothing better to do; for if they could get it, before like bad habits have been confirmed, and that is soon done, because it is the only part of their activity in which they are their own masters, they would be very glad to do it. The labouring people's children in Holland, Switzerland, and some other countries, make toys and wooden clocks, and other little articles at their leisure hours, and they grow up to be remarkably industrious and well behaved, and in their way, clever men.

But, can't the boys go and learn of the tinker still? Compared with what he once had, he has very little to teach them, and that has lowered his character and debased his habits. He used to be an iron-founder and a brass-founder; and had a complete array of crucibles for melting his metals, and bellows for blowing his fire, and hammers and pincers. He also knew how to mix his metals—would have made a fine-toned bell out of an old tin-pot and copper kettle; and work up all the old tin, copper, and brass, for use again. He compounded his solder too, so that he could give the scums of the kettle the degree of firmness that you wanted; and if you wanted a kettle to stand a strong heat, the brass and zinc and copper filings were mixed in a wryneck, and iron itself was so firmly joined as to bear a red heat. At a pinch he could clean a clock, sometimes a watch, and do many other neat things. It was sometimes said, indeed, that he would, in mending one hole, make other two; but that was when he was disappointed of his mug of ale. The modern tinker has little save a pot of coke, blown by means of holes in the bottom, a soldering-iron, some soft solder and a pinch of rosin; and therefore his employment is as inferior as himself.

Among the gipsies—those that are really gipsies, there are often tinkers of the higher class. Indeed it is probable that the original tinkers were all of gipsy race. These gipsies, of whom some, though probably under quite a different name, came to Britain as early as the days of the Romans, are of Indian extraction. The gipsy colour is that of the Hindoo whitened by the colder climate. It is not easy to say, indeed, how many of our arts we learned from the people of India; but it is very probable, that the instructors of our fathers in the working of metals came from them. If it be true, that the Phoenicians traded to Cornwall for tin, then it is not at all improbable that the first Cornish miners were from the east.—One is sorry for the tinker, he is but the ruin of his former self.

THE
GUIDE TO KNOWLEDGE.

EDITED BY MR. W. PINNOCK.

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No. XIII.]

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ONE PENCE.

BRITISH MANUFACTURES.—No. III.



BEASTING IN AN IRON MINE.

IRON.

THE ores of iron are now found in every quarter of the globe, but our own land is peculiarly favoured both for the excellence of its native iron and the prodigious advantage which the steam-engine gives us in its manufacture. The durability of iron, and its indispensable assistance in the preparation of every other metal, make it one of the most valuable possessions that has been bequeathed to the use of civilised man. "Without it," observes Fourcroy, "agriculture could not have existed, nor could the plough have rendered the earth fertile. The philosopher, while he studies the progress of the human understanding, and compares the fortune and state of the different nations established on various portions of the surface of the globe, will remark, that their iron-works seem,

in some measure, to be proportioned to their intelligence, to the advancement of reason amongst them, and the degree of perfection to which the arts have arrived." When we consider it in this point of view, as the agent by which men, in the variety of its uses, and the numerous wants it supplies, acquire enjoyments which would be unknown to them if they did not possess these products of their industry, iron must singularly contribute to extend their ideas, to multiply their knowledge, and conduct their spirits towards that perfectibility which nature has given, no less as the character of the human species than as the source of all the advantages it can enjoy."

Iron is rarely found in a native state, and those instances that have occurred carry with them a very peculiar degree of interest. They are supposed to have fallen from the moon to our own planet.

A mass of native iron, reported by the inhabitants of the country to have fallen from the sky, was found by Professor Pallas in Siberia. Between the rivulets Upej and Sissim, that run into the Jenisei on the eastern side, is a mountain containing a rich mine of magnetic iron ore; on the same side of the mountain where this mine is situated, was found lying loose on the rock the mass of native iron alluded to, weighing 1680lbs. b This mass is cellular, and the cells are either empty or occupied by a transparent greenish yellow substance, at first taken for fluor spar, but which subsequent examination greatly resembles the chrysolite. c

A still larger mass of native iron was seen and described by Don Rubin de Celis. It is situated in the district of Otumpia, in the Vice Royalty of Peru; its weight is about fifteen tons; it is compact externally, and is marked with impressions as if of hands and feet, but much larger, and of claws of birds; internally it is full of cavities. It is also imbedded in white clay, and the country round is quite flat and destitute of water. Another mass of iron similar in shape, to a fallen tree, has also been seen in the same territory.

Native iron in detached masses, and of a cellular texture, has been found near Tabor in Bohemia, and in Senegal in Africa.

All these specimens of native iron bear a striking resemblance to each other in their being found in casual detached masses on the surface of the earth, in their cellular texture, and in their chemical composition, so that it is probable that they have originated from similar causes, and the hypothesis of their having fallen from the moon, or the atmosphere, appears to be supported by strong analogy as well as vulgar tradition.

It is not, however, from *casual iron*, that the vast quantities consumed are supplied; but by mining and sinking large pits, and in some cases merely collecting it from masses of iron combined with oxygen found on the earth's surface. The interior of a large iron mine is placed at the head of this article, which will furnish the reader with some idea of the amazing masses of earth, which it is often necessary to remove before the ore can be raised for manufacturing purposes. In this case the ore with its earthy bed is dislodged by *blasting* with gunpowder. A hole is pierced in the earth and a tube of the inflammable material introduced, which is ignited as soon as the workmen can quit the neighbourhood of the blast. The above process is seen going on to the left of the mine; and while some workmen are breaking up the masses of ore, others are engaged by the aid of machinery in elevating it to the mouth of the shaft.

On reaching the earth's surface, one of the first processes is that of *roasting*. This is effected by mixing it with refuse coal and lighting the whole mass, and the object of the manufacturer is to consume the sulphur and other extraneous bodies. The next process is by the aid of a blast furnace, to fuse or melt the iron. It is afterwards refined, and becomes bar iron. The hammers employed at the Carron works for beating the iron, weigh about four hundred weight each, and make about two hundred and fifty blows in a minute.

Iron is converted into steel by making it hot in contact with charcoal.

The most singular property belonging to steel is, that of its hardening by being heated red-hot, and suddenly cooled; and the hotter the steel is made, and the colder the fluid into which it is plunged, the harder will be the steel. Water is generally employed for this purpose; and spring water is considered to be the best.

Iron is easily drawn into small wire, and this is effected by passing the metal through a series of holes in a steel plate, so that

each hole is somewhat smaller than the one which precedes it. By this means wire for musical instruments, and other purposes, may be produced less than the hundredth of an inch in diameter. To protect fine cutlery and delicate instruments of steel from the effects of rust, it has been proposed by Mr. Pepys to inclose them in a thin case of zinc. By this process an electric-galvanic arrangement, similar to the plan suggested by Sir Humphry Davy for protecting ships, is produced, and the instrument effectually preserved, even when immersed in a strong acid. It is but justice to this distinguished individual to remark, that all his discoveries, like those of Dr. Wollaston, have tended towards the improvement of our manufactures.

The cheapest test to detect the presence of iron when chemically combined with any other body, is infusion of oak-galls. This may readily be procured, and turns the fluid containing iron of a dense black colour—hence the name for employing sulphate of iron, or what is erroneously termed “copperas,” in the manufacture of ink and durable dyes.

HISTORY OF ASTRONOMY.

(Continued from page 68.)

It is usual to consider the Turks as exceedingly illiterate, and ignorant of the sciences; almost as early as the foundation of their empire, in the thirteenth century, colleges were instituted, and Geometry and Astronomy taught, as they still are; the latter principally for its indispensable use in the study of *Judicial Astrology*,* to which they are much devoted. They are said to be in possession of many books saved from the destruction of the Alexandrian library, the contents of which have never been published; but they have never yet added one discovery to the sciences.

About the same time that the Turks began to promote the study of astronomy, OKTAY KHAN, one of the Tartar princes, on the throne of China, exerted himself for the same purpose in that country; he sent for learned men from Arabia, Persia, &c.; constructed colleges, purchased books, and caused proper instruments to be fabricated for the advancement of this science and geography. But the Chinese, from the nature of their language, and other causes, labour under disadvantages in the study of the sciences, which all their diligence will not enable them to overcome; although many of their princes, and especially HUVERLAR, the brother of *Houlagon*, already mentioned, exerted themselves to the utmost, by assembling learned men, by establishing important regulations, by expending large sums in forming libraries, and procuring instruments. Astronomy has made no great progress in this vast empire, nor is it at present in a state to be compared with European acquirements.

The thirteenth century produced many celebrated astronomers in Spain; at the head of whom is ALPHONSE X.,† King of *Castile* and *Leon*, to whose care and munificent management of the science we owe the *Alphonseine Tables*. Nor was astronomy neglected in England; so early as the eighth century, the venerable BEDE,

* Astrology is usually divided into two parts, *Natural* and *Judicial*. *JUDICIAL ASTROLOGY* is that which pretends to foretell moral events; that is, such as have a dependence on the free will and agency of man, as if they were directed by the stars. This art, which owed its origin to the practices of knavery or credulity, is now universally exploded by the intelligent part of mankind. *NATURAL ASTROLOGY* is the predicting natural events from natural causes; as, the changes of the weather, winds, storms, thunder, hurricanes, floods, earthquakes, &c., &c.

† Succeeded to the crown in 1252.

GUIDE TO KNOWLEDGE:

or BEDE, was a proficient in it, as far as the science was then known; and A. D. 1220, John de Sacro Bosco, another Englishman, wrote treatises on the *Astrologie*, and the *calendar*; and Roger Bacon, a Franciscan friar, astonished all Europe by his proficency in *Natural Philosophy* and *Astronomy*. It would occupy much space unnecessarily, to enumerate all the authors who have rendered themselves benefactors of mankind, by discoveries in this valuable science; we must content ourselves, therefore, with noticing those only, who have enriched it by their labours in an eminent degree.

In the fifteenth century, an endeavour was made by *Cardinal d'Estouteville* to introduce the *true system of the universe*, attempted in vain by Pythagoras, two thousand years before, and by many subsequent philosophers; but men's minds were not yet prepared for this truth, and it was again rejected.

The next astronomers of note were *Purbach*, and his pupil *Regiomontanus*,^{*} the former of whom made a translation of the Almagest of Ptolemy into *Latin*, more correct than former editions, and made great improvements in astronomy, in the construction of astronomical instruments, and celestial globes, marking on the latter the progress of the stars in longitude, from the time of Ptolemy to the era in which he lived. Being cut off at an early age by death, his friend and disciple *Regiomontanus*, was invited by the senate of Nuremberg, to reside in that city, where he built an observatory, and made numerous observations on the stars, from which he corrected, or enlarged, the ancient theories.

He had likewise an opportunity, in 1472, of observing a *comet*, and some of the phenomena attending its progress. In 1474, he was invited to *Rome*, by Pope *Sixtus IV.*, to assist in reforming the *calendar*, but his premature death by the plague, or, as some think, by poison, prevented the accomplishment of this project. He was succeeded at Nuremberg by *Waltherius*, whose observations, together with those of his predecessor, were, after their death collected and published in 1544, by order of the senate.

The successor of Waltherius was *Werner*, who observed the motion of the comet of 1500, and showed that the motion of the fixed stars, usually called the precession of the equinoxes, is $1^{\circ} 10'$ in 100 years; he found also, that the obliquity of the Ecliptic is only $23^{\circ} 28'$; he likewise recommended that method now universally practised, of finding the longitude at sea, by observing the Moon's distance from the fixed stars, and constructed a planitarium according to the Ptolemaic System. *Werner* died in 1528.

Dominic Maria Novara, of Bologna, claims our notice, not so much for his superior knowledge, or the importance of his labours in the cause of science, as for his having instructed the celebrated *COPERNICUS* in *Astronomy*.

This great man, who was a native of Thorn in Prussia,^t born Feb. 19, 1473, was dissatisfied with the popular theory, especially as he found that some of the phenomena displayed by *Venus*, could not be solved by the *Ptolemaic hypothesis*. He was led to the discovery of the true System by the mention he found of the opinions of *Pythagoras*, in the works of *Cicero*, *Plutarch*, and others. So powerful, however, was the influence of superstition on the minds of men in general, and of the clergy of that day in particular, that he did not venture to publish the book which he had written on the subject until a short period before death removed him from the fear of man.

Yet, although his system accounted most satisfactorily, rationally, and simply for the direct and retrograde motions, and occasional

stationary appearance of the planets, and many other phenomena, which could not be explained by the commonly received doctrine, the opposition of the clergy, who represented it as heretical and revolutionary to the Holy Scriptures, prevented for a long time its receiving that attention and support which it deserved, but "magis est veritas et pravalet," and the discovery of the telescope soon after, so powerfully seconded the dictates of reason, by the result of the observations it enabled philosophers to make, that it forced its way in spite of opposition and danger.

Many distinguished Astronomers flourished at the same time with *Copernicus*, or soon after. Of these *Schöner*, *Nasius*, *Appian*, *Fritius*, *Kothman*, *Eyrinus*, and *William IV.*, Landgrave of Hesse Cassel, *Rhetius*, &c., enriched the science with many valuable improvements, the result of diligent study and observation.

One eminent personage, who considered the opinions of *COPERNICUS* as at variance with the doctrines of the Bible, and yet was aware that the Ptolemaic System would not satisfactorily account for many of the motions and appearances of the heavenly bodies, endeavoured to invent a system which should harmonize with the Scriptures, and at the same time, remove the difficulties. This was *TYCHO BRAHE*, a Danish nobleman, who resided at *Uraniborg*, in the Isle of *Hven*, near *Zealand*. He accordingly asserted, that the Earth was fixed in the centre, and that the Moon and Sun revolved round her; that the planets *Mercury*, *Venus*, *Mars*, *Jupiter*, and *Saturn*, moved round the Sun; and, together with him were carried round the Earth.

This System was too absurd to gain much footing with the learned, but though he was unsuccessful in planning a new system, he rendered great services to the science in general, by forming a catalogue of the stars, with greater exactness than his predecessors, and determining the effect of refractions, whereby we see the sun, or a star, above the horizon, when it is not so in reality. He discovered two of the principal irregularities in the moon's motion, the variation, and the annual equation; and demonstrated that *Comets* are not meteors, but solid bodies, like the planets, and, like them, revolve about the sun. In such estimation was this eminent astronomer held, that learned men repaired to him for advice, and even monarchs condescended to visit him in his retirement. After the death of the King of Denmark, he, at the invitation of the EMPEROR RODOLPHUS, went to reside in a castle near PRAGUE which that monarch gave him, but he lived not long to enjoy his new situation. He died Oct. 14, 1601.

Contemporary, and a coadjutor with *Tycho*, during his residence in *Bohemia*, was *JOHN KEPLER*, whose name is celebrated as the discoverer of certain laws that regulated the planetary motions, though he did not demonstrate those laws, yet he gave such information as laid the foundation for the immortal *SIR ISAAC NEWTON* to demonstrate an absolute necessity of these laws; and that without a total subversion of the "Laws of Nature," the heavenly bodies cannot be otherwise regulated.

Hence, the first founder of Modern Astronomy was *KEPLER*; and if it be the privilege of genius to change received ideas, and announce truths which had never before been discovered, he may justly be considered as one of the greatest men that had yet appeared in the world.

Hipparchus, Ptolemy, Tycho Brahe, and even *Copernicus* himself, were indebted for a great part of their knowledge to the Egyptians, Chaldeans, and Indians, who were their masters in the science; but *KEPLER*, by his own talents and industry, had *original* discoveries, of which no traces are to be found in all the annals of antiquity. This great philosopher was born at *Weil*, in the province of *Württemburg*, in Germany, in 1571, and was one of the

^s His real name was *John Muller*.
^t Prussian Poland.

most zealous partisans for the Copernican System, that had hitherto appeared.

BARON NAPIER, the celebrated inventor of the Logarithms, was no mean proficient in astronomy.

But it was now destined to receive a powerful assistance, by means of which wonders have been discovered, that, without it would have been for ever hidden from mortal eye.

The telescope had been invented and used for terrestrial purposes for some time, when GALILEO, having constructed one on an improved principle, merely from description, as he had never seen one, applied it to the observance of the celestial bodies; it opened a world of wonders to his view, of which he had, previously, no conception. The discoveries he made fully convinced him of the correctness of the *Copernican* theory, and this he had the courage to avow in the most public manner. But bigotry, that foe to truth, laid its iron hand upon him, and he was thrown into the prison of the Inquisition,* where he was detained several months, and compelled to promise, that he would renounce his terrestrial opinions, and not teach or defend them, either by word or writing. A promise extorted by fear of death, he did not consider binding; he therefore ventured, about seventeen years after, in 1632, to publish at Florence the dialogues of the two great systems of the World, the *Ptolemaic* and the *Copernican*.

The vigilance of persecutors seldom relaxes. He was again brought before the terrible tribunal, and committed to their loathsome dungeons, where he was confined two years; his books were burnt at *Rome*, he was compelled to recant his sentiments, and enjoined a ridiculous penance as the condition of his release. This great man made many interesting observations on the Moon, discovered Jupiter's satellites, Saturn's Ring, the spots on the Sun's disk, by which he ascertained that that luminary turns on his axis, and that the nebulae, and milky way, consist of stars at such an immense distance, that they cannot be distinctly seen with the unassisted eye. He died in 1642.

By means of the telescope, GASSENDI, a French astronomer, first observed, in 1631, the transit of *Mercury* across the Sun's disk, and in 1639, that of *Venus* was seen by HORROX, an Englishman. These phenomena were then considered merely as remarkable and interesting spectacles, but they have since been made conducive to the determining of the Sun's distance from the Earth, and the solution of other astronomical problems.

About the same time, RICCIOLI, a Jesuit,† published a work, which he denominated the new *Almagest*, in which he was much assisted by GRIMALDI, the author of a treatise called *Selenography*, in which the different parts of the Moon are distinguished by names, the greater number of which are still retained by astronomers.

Many improvements were made in the telescope by HUYGENS, TONTANA, CASSINI, MORIN, AZOUL, and HOOK, by which more accurate observations could be made on the heavenly bodies. MORIN discovered the method of ascertaining the longitude by astronomical observations. HUYGENS discovered the fourth satellite of *Saturn*, and CASSINI, the first, second, third, and fifth. In 1666, AZOUL applied a micrometer§ to the telescope, for the purpose of measuring the diameter of a planet, and other small distances in the heavens.

(To be concluded in our next.)

* A Spiritual Court in Roman Catholic countries, appointed for the trial and punishment of heretics; viz., all those who opposed the Papists in their doctrines.

† To retract, or contradict what one has professed, said, or done.

‡ The JESUITS (or, the Society of Jesus), were a famous religious order in the Romish Church, founded by Ignatius Loyola, a Spaniard, a.p. 1538.

§ An astronomical instrument, which, by means of a very small screw, serves to measure very small distances in the heavens.

ORIGIN OF ERRORS.

II.—TRANSMIGRATION OF THE SOUL.

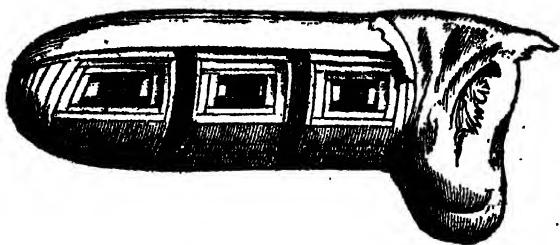
UNDER the name "Metempsychosis" Pythagoras and his followers promulgated the doctrine which taught the passage of the human spirit after death into the body of another man, a brute animal, or a plant. It was their opinion, that the spirit of a vicious person, instantaneously upon its dissolution from the body, took possession of the body of some miserable beast; and, that by a similar transition, the spirit of a virtuous person entered the body of a happy brute, or as the case might be, of an honourable man or woman. In this way, the transmigration was to continue for ages, working penitence in the wicked, and perfectability in the good, till like tried gold, they entered finally upon their elysian rest. This strange doctrine is still a matter of faith among the idolatrous inhabitants of India and China, and forms indeed the chief basis of their wild theology. So bigoted are they in their belief, that they not only abstain from eating any thing that once possessed life, but refuse to defend themselves from wild beasts, and even at this day, they have an hospital in *Bombay* for the nursery of bugs and every description of vermin. They refrain also from burning wood, lest insects, or "any creeping thing that hath life," should be in it; and some even go to the extent of redeeming from the lands of European butchers any animal condemned to serve the merchant's tables. Monstrous, and almost fabulous, as this may appear, we are sorry that historic truth compels us to add, that even at this day, many men in London actually believe and practise the same absurdities. We know several, who constantly feed upon vegetables, lest by luxuriating upon a beef-steak, they should commit the enormity of swallowing some once tough old stockbroker, or other valued friend.

It will be our business to trace this error to its source.

The notion of a metempsychosis originated in Egypt; and it was from thence derived by Pythagoras, and afterwards adopted by his disciples into their double-faced philosophy. In tracing its origin in Egypt, it will be necessary to bear in mind the apostolic declaration, that "the world by wisdom knew not God." It required the pen of divine revelation, to say, "In the beginning God created the heaven and the earth;"—without revelation no man could make such a declaration, and accordingly we find that no man ever did make it; but that on the contrary, the heathens derived their gods from the earth, and not the earth from God. Naturally blind, the priestly castes of Egypt invented a pompous system of theology, which while it delighted the worldly eyes of a splendour-loving people, robbed them of their wealth, blinded their consciences, and left them poor indeed. A faint glimmering of truth,

which the bible student recognises a scattered ray of revelation, kept, however, the lying fabric from destruction; one of these was a confused notion of the immortality of the soul; but their benighted minds seem to have been incapable of retaining it in its purity:—they were surrounded by animals, which, from their intelligence and usefulness, seemed, to their gross perceptions to be as fully entitled to the glories of an everlasting existence as corrupt and fallen man. Egypt was a corn-growing country, and abounded with mice; and the services of the cat in their diminution became in time so important, that she was esteemed a proper object for divine honour, and forthwith pussy became a demigod. The Ibis was, in like manner, invested with celestial honours, and the industrious killer of snakes, became a "sacred bird." The poor beetles were also erected into a holy order; and henceforward, the castes of "sacred scarabæ" were wrapped by hundreds in the drapery of the dead.

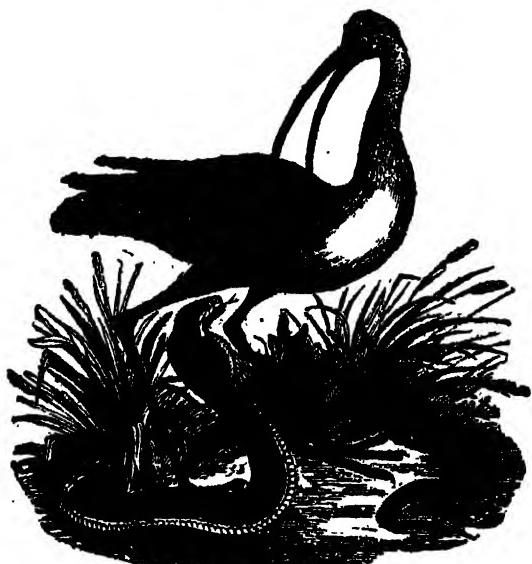
In this manner, addition after addition was made, till the celestial menagerie became complete.



MUMMY OF AN EGYPTIAN CAT.



HEAD OF MUMMY-CAT, UNROLLED.

IBIS AND HOODED SNAKE—(*Coluber naja*).

SCARABAEUS, OR, SACRED BEETLE.

Under the influence of these corrupt nations, it is not difficult to imagine some old priest in sombre meditation wrapped, the vast pyramids of death flinging their gigantic shadows across living millions, and shading his own venerable head from the fierce glories of an Egyptian heaven,—he is near the mouth of a mummy-pit—the grisly regiments are faintly visible, but—oh! how “chop-fallen” and disgraced—still are they—still as death—where has the active spirit flown—vegetation rotting produces vegetation—Ha—?—?—At this moment a troop of king’s horse gallop proudly from the city “their necks clothed with the thunder-flash—terrible the pomp of their nostrils—they mock at fear, and tremble not. With rage and fury they devour the ground, and are impatient when the trumpet soundeth.” What glorious animals—fired with all the flaming courage of their riders—and MAN AND HORSE SEEM ONE. This last thought turns the old man pale—he conceives a transmigration—he proposes its probability, the next age declares its possibility, and the next its truth. This, we conceive, might have been the origin of the transmigration of the human soul;—we offer it as a mere conjecture, in the trust, however, that, at least, it may be deemed a plausible one. Such investigations are highly useful, and in the present case help us properly to appreciate those sacred scriptures, which have brought life and immortality to light by the gospel. Egypt is in ruins—and even these are fast vanishing from sight, in the great sand-waves, that are constantly rolling in upon her from the western desert;—her deified brutes stand only as monuments of Christian pity in the cabinets of the curious; and not a single genuine descendant of her vast population, is left to blush for his ancestors’ disgrace. Yet the truth lives—the sacred word which first raised mankind from the stupor of the fall still lives, to tell the soul that “ABSENT FROM THE BODY SHE WILL BE PRESENT WITH THE LORD.”

Y.

MNEMONICA, OR HELPS FOR THE MEMORY.

PRECEPTS and RULES may be given to obviate most of the difficulties which persons experience, who complain of bad memories; but then, those precepts should be remembered, and the rules strictly followed. MEMORY is a repository, in which our mental valuables are deposited, and when we want any article for immediate use, we of course resort to the storehouse of intellect; and if that has been properly arranged, and distinctly ordered, we shall seldom be at a loss to lay hold of the desired object: defect of memory arises from confusion of ideas more than from lapse or escape of the impression; there are people who scarcely ever know where to look for any thing after they have once laid it out of their hands; and this happens, because they do not adhere to order, by replacing the thing where it was found, and from whence it was taken. Suppose a library for instance with several divisions, in each of which shall be various authors on Architecture, Botany, Chemistry, Divinity, Ethics, Geometry, History, Law, Philosophy, &c.; and each of these duly assorted in their peculiar compartments, there would be no difficulty in selecting any particular author upon one of those subjects; but intermix and derange the works of any one division, and confusion ensues; and much more than simple confusion, should the books be indiscriminately tumbled into the separate divisions; for then it would constitute a compound confusion. Similar effects will be produced upon the memory, by an injudicious, or careless management of the *Materia Mentis*, or treasury of the mind. Order then is one of the most important rules for assisting the MEMORY, and

this consists in the preservation of a regular and unbroken series of ideas, a concatenation,* link after link, till we arrive at the end, like a guiding thread that leads to the centre, and from the centre to the extremity of a labyrinth. Impression also should be regarded; the sensibility of the mind, is like the animal feeling; if the hand were benumbed it could not feel the thread, and however susceptible of the touch, it must be pressed upon with some degree of force in the grasp; so also the mind, if stupefied, or indifferent to an emotion, will not be able to pursue a train of thoughts, at which it does not grasp with some intensity; the slackened thread drops from the hand, and the loose idea vanishes from the mind. (To effect the power of retentiveness, we should fix steadily upon the principles of a subject, its ends, and purposes, the foundation on which it rests, and the capital arguments by which it is connected and supported;) all the auxiliary materials, amplifications, and ornaments will follow in their proper routine of succession; and to a clear understanding will naturally suggest themselves." Imbecile minds, like those of children, can only take short flights, they ascend and descend alternatively, the wings of reason are weak, but, as they strengthen by exercise, they will bear them further, and carry them higher in the regions of KNOWLEDGE. Experience shows, that repetitions are necessary for feeble memories, beginning with one simple proposition, then adding another, repeating the former therewith; then a third, still recapitulating as before to a fourth, fifth, or sixth, in the manner of that well-known nursery trifle, "The House that Juck built." Epicurus† asserts, that the mind of MAN is in its primitive state a "Ram Tabula," or plain surface, on which objects of sense make all the impressions, that constitute the character and capabilities of its faculties; but in this theory, he seems to overlook the evidence of thought, which often rises spontaneously in the Mind, without any correspondent physical object whatsoever; such as the notion of a DEITY, and the ardent hope of immortality. Even Epicurus himself, who, perhaps, had no faith in these convictions, must, as a philosopher, have observed some of those evanescent ideas, that, like a flash of lightning will occasionally and unprovoked by outward appearances dart upon the mind, disappear in a twinkling, leave only a melancholy pleasure of a momentary illumination, and are gone for ever to the ethereal world, never to be recalled; they are the delicate intimations of that spirit which God breathed into man, and the intangible§ glances of celestial light, too pure and too sublime to incorporate with, or to be held by, our material faculties. How we regret their exit! So far, however, as KNOWLEDGE is to be acquired through the corporeal senses, Epicurus's doctrine is true; it is therefore highly necessary that this Ram Tabula, should not be defaced by marks and characters that exclude or render unintelligible the designs of its formation; every thing there should be distinct, and in unison; whatever is out of place disfigures or obliterates something else; it is idle to complain of what God has given us, while we take no measures to improve the gift for our own advantage. MEMORY is one of those gifts that admits of improvement, and these are some rules for that purpose.

(To be continued.)

* A series of links. In Philosophy, a connexion of things which naturally depend on each other like the links of a chain.

† Epicurus, a Grecian philosopher, was born about 342 B.C. He finally settled at Athens, where he obtained a number of disciples, owing to the pleasantness of his system, and his deportment.

‡ Evanescent, vanishing; lessening beyond the perception of the senses.

§ That which cannot be touched.

GUIDE TO KNOWLEDGE

ON THE ORIGIN OF NATIONS.

FIRST OF BABYLONIA, OR BABYLON; ASSYRIA, EGYPT, GREECE, ETC. ETC.

(Continued from page 91.)

The successors of this great prince applied themselves to cultivate the arts of peace. They succeeded, and EGYPT became the most flourishing kingdom in the world. The number of inhabitants are said to have been no less than 27,000,000; its cities were very numerous, and its buildings were amazing; some of them, particularly the PYRAMIDS, are still considered with astonishment.

EUROPE during this period was involved in the thickest cloud of ignorance. Ferocious in their nature, and savage in their manners, the inhabitants lived in forests and caverns of the mountains; they sometimes fell a prey to wild beasts, and sometimes to the barbarous brutality of one another.

Such were the ancestors of the Greeks, who afterwards became the patterns of politeness, and the great masters of every elegant art. But they owed their refinement and taste to the Egyptians, who now cultivated every species of literature with success.

B.C. 1555, CECROPS landed in Greece with an Egyptian colony, and laboured with the utmost assiduity to polish the manners and reform the savage customs of the inhabitants. Before his arrival they were strangers to laws; even those which related to marriage were unknown. They propagated their species like the beasts of the forests, without forming the tender connexions that subsist in families, and which the most savage nations cultivate and esteem.

Cecrops built ATHENS, so called from *Athene*, or *Minerva*, one of the Egyptian deities worshipped at *Sais*, the city from whence he came into *Attica*, B.C. 1556.

The wise measures of Cecrops for reforming the manners of the Greeks, were pursued by his successor CRANAUS; who, in the first year of his reign, founded the celebrated "Council of the Areopagus," which was so long famous in history.

While these wise princes were exercising their abilities in reforming one of the kingdoms of Greece, others were employed in the same beneficial plan, in different parts of that country. Greece soon became famous for learning and the Arts: the rough manners of the inhabitants were polished and refined by successive colonies from *Egypt* and *Phoenicia*: the rudest people became the most polite; and the Arts, which had their birth in *Asia*, were nursed with the most tender care in Greece. But the number of petty states into which the country was divided, rendered the inhabitants incapable of making a successful stand against a powerful enemy. AMPHICTYON, one of those superior geniuses that are born for the instruction and benefit of mankind, saw the weakness of his country, and formed a plan for uniting all the states of Greece into one grand confederacy.

CHANGES OF THE UNIVERSE.

EVERYTHING around us is in a constant state of motion, yet nothing falls into disorder. The heavenly bodies perform their revolutions with the utmost possible regularity. Even those eccentric bodies, comets, have their orbits, and travel regularly within their allotted space. How regularly and invariably do the seasons depart and return! Spring and summer, seedtime and harvest, never

fail to return. The visible world itself is perpetually undergoing changes. The earth is constantly being deprived of its nourishing juices by the plants and roots. But is it, therefore, worn out and rendered sterile? No; for the same wise Being who has ordained that the vegetable and animal creation shall depend upon the earth's fecundity for support, has ordained, likewise, that that fecundity shall be perpetually renewed and maintained. With our own frames it is the same. At every instant of our lives we are literally *wearing out* our bodies. Insensible perspiration alone deprives us, every day, of some pounds weight of our substance. But the aliments which God has provided for us replace the waste thus caused, and restore us the strength we expend.

How wonderful is the wisdom which has thus provided for the continued existence of the universe! how wonderful, also, is the power which has, from the beginning of time, instituted this unvarying succession of circumstances! Can we reflect upon the innumerable manifestations of this power and of this wisdom without feeling the highest admiration and the utmost humility? Above all, when we reflect upon the innumerable instances in which, to this power and this wisdom, there is added a boundless and almost incredible benevolence, can we fail to be penetrated by the most sincere and profound gratitude? If we meditate aright we most surely cannot: let us, then, not become guilty, as well as unwise, by neglecting thus to meditate.

MISCELLANEOUS.

Recreation is not being idle, but easing the wearied part by change of business.—*Locke*.

A genius will educate himself in spite of obstacles.—*J. J. Rousseau*.

The great end of a good education is to form a reasonable man.—*J. J. Rousseau*.

Time and pains allotted to serious improvements should be employed about things of most use and consequence.—*Locke*.

Gardening, or husbandry in general, and working in wood as a carpenter, joiner, or turner, are fit and healthy recreations for a man of study, or business.—*Locke*.

Gaming leaves no satisfaction behind it to those who reflect when it is over; and it in no wise profits either body or mind.—*Locke*.

In order to know mankind, we must begin by studying man; therefore, youth should begin the study of the human heart by reading the lives of particular men.—*J. J. Rousseau*.

Languages are useful to men of all conditions, and they equally open them the entrance either to the most profound, or the most easy, and entertaining parts of learning.—*La Bruyère*.

Whatever contributes to the welfare of an individual engages his affections; whatever is likely to destroy it, he will repel.

To increase the vigour of the mind, we ought to increase the strength of the body.

If any thing can cure vanity, it is experience.

The peculiar manner in which we form ideas is what constitutes the genius of the mind.

As every thread of gold is valuable, so is every minute of time; and as it would be [great folly to shoe horses (as Nero did) with gold, so it is to spend time in trifles.—*Mosse*.

Humility ever dwells with men of noble minds, it is a flower that prospers not in lean and barren soils; but in a ground that is rich, it flourishes and is beautiful.—*Feltbam*.

The skill should be, so to order the time of recreation that it may relax, and refresh the part that has been exercised, and is tired, and yet do something, which, besides the present delight and ease, may produce what will afterwards be profitable.—*Locke*.

PHILOSOPHY OF THE STREETS OF LONDON.

THE JEW.

THERE goes Moses Aaron, the Jew, with his "sloshed hat," his coat which has shone in Bond Street—some three years ago, and his black bag across his shoulder. How like a raven he looks with his dark eyes, his long beak and his grunting sound of "clo! clo!" as he creeps along the pavement, peeping into every area with the same sharp sight as a magpie peers into a marrow-bone. That Jew appears to see nothing, but in fact he sees every thing. Those eyes which are lurking so darkly beneath those shaggy brows, and hiding themselves in the shadow of that great hooked nose, are perfect microscopes, and there is not a speck on the wall, or a particle of dust on the pavement of which they do not take notice.

The Jew is in truth the raven of the city, just as his dusky brother is the raven of the wilds; and both the wilds and the city are all the better for the raven. He of the wilds eats up carrion and offal which otherwise would taint the air, and render it unwholesome for more cleanly creatures. So also the Jew collects the refuse and offal of the wardrobe of the house, which, if retained, would keep the place in a litter, unsightly to look at, and useful to nobody. To the Jew, however, that is wealth, which to any one else is rags and rubbish. Old clothes, if at all tolerable, are washed and glued, and scratched with a toothed instrument till they have a nap upon them, and the simple purchase them as if they were little the worse of the wear, and are happy in that cheap bargain which is to last only for a week. So also old hats, even if they are full of holes and as brown as foxes, are stiffened up with pasteboard and chips of wood, and glue, and stuck over with rabbit's hair, and dyed and resold to the yokels as "spick and span new" beavers of the first quality; but after the first heavy shower of rain, the "shocking bad hat" returns with all its holes and in all its brownness; and the chubby-faced dandy, with his scarlet plush waistcoat spotted with black, must come back to Moses the very next time he drives his team to town, unless he has the sense to go to a Christian batter, and lay out his five shillings upon a "south-wester," felted of good British wool, which will make him look like himself, and keep the rain out of his neck for a twelvemonth. At other times the "shocking bad hat," glued and pasteboarded as before, is pasted over with shag, and becomes a "silk hat, upon a beaver body warranted water-proof." Now, instead of being upon a beaver body, it is not on beaver at all, as little is it on a body—it is on a mere skeleton of flock, not felted but glued together, and possibly made out of a drayman's cast-off jacket torn to hairs by a peculiar kind of machine, which is called a "devil." As for its being "water-proof" again, it gives a very different proof from what the buyer expects; it proves how quickly it can go to pieces with the very lightest shower that falls; and thus, though it is no proof *against* water, it is one of the very best proofs *of* it. It is water-proof just in the same manner as a house that has got holes in the roof of it; it proves to the owner that there is water every time a drop of rain falls.



THE JEW.

Then, though Moses is no "scholar" he is a very eminent and skilful "translator," not of the ancient tongues into modern English, but of aged boots and worn-out slippers into new shoes. If you walk along Rosemary Lane, or Monmouth Street, you shall see them by the gross shining in all the lustre, not of "Day," but of night—night dark and grim as Erebus. Three flights of broken steps down the cellar stairs, there lives a man whose furniture and wardrobe the most griping landlord in Lambeth, or the Kent Road, would be ashamed to distrain for three-halfpence of rent, although his farthing bag which he wrings weekly from his miseries makes him sweat again. That man is boiling up shreds of glove-leather and fish-fins gathered in the streets, and bits of old leather breeches and gaiters, and plaster of Paris and soot, and that dark mixture, he ever and anon, daubs over the leaky shoes and time-worn boots, till not a crack or crevice can be seen, just in the same manner that a crafty builder of "houses for sale" daubs his half-rotted, or quarter-burned bricks, with stucco, and so vamps up and vapours in his advertisements, "Genteel white fronted houses, not to be distinguished from real stone;" and which before twenty years have passed over them will not be distinguished from real rubbish. Those houses, as if the stucco were ashamed of being made the cover of so much deception, cast their coats annually like snakes; and it is much the same with shoes which Moses translates out of old rotten and sapless leather, into new glue, and plaster and soot. They are fine shoes for the wearied man; for instead of imbibing moisture and gathering mud, as good shoes do, and the better and newer they are they imbibe it the more, they lose weight at every step. They even make a man's life seem a great deal longer than it really is; for he puts on a pair of shoes which seem sound and good, and certain to last a couple of months at the least; but lo and behold! he steps into a puddle the next moment, and out he comes the very moment after with his shoes all in holes, done, good for nothing. The truth is in these cases, the purchaser is "done" as well as the shoes.

Yet, herein Moses holds up a mirror which reflects beautifully the light of truth. It says, in lines as legible as "if they were graven with an iron pen, and lead in the rock," "Beware of imitations! shun counterfeits, spurn patchings and translations in every thing, and be new, fresh and original, or be nothing;" and inasmuch as he teaches us that lesson, we should be grateful to Moses, and earnestly wish that he could teach it every where, to the high and the learned, as well as to the lowly, the simple.

The Jew is a most interesting character; and, notwithstanding his gloomy looks, his hollow voice, and the exclusion of his race from the general citizenship of the world for nearly two thousand years, and the cruel persecution (the most disgraceful spot on Christian history) which that race has been made to suffer for a great part of the time, that Jew has an honest heart and a kind heart. Driving bargains is his whole trade; and in justice we ought to judge of the man who lives by that, on the same principles as we would judge of the man who earns his living in any other way. "A hard-working man" is about the best, and deservedly the best character we can give a mechanical labourer; and as bargaining is the Jew's work, why should not a "hard-bargaining Jew" be the very perfection of his character. Each man is making the most of his calling, doing the best for himself and his family; and so that he is honest, the one is just as much entitled to our respect and commendation as the other.

And, mean though he may be in his appearance, uncouth in his beard, and time-worn in his clothes, the Jew is honest, and his word once passed is irrefragable as the Laws of the Medes and Persians. In making your bargain with him, take care; but if it is once made, fear nothing: the Jew will not abate you a tittle; but if the word is spoken, he will not lack one tittle in the fulfilment.

Then the Jew is a kind man, and bountiful to all his kindred; and you will often find his name down in the list of a Christian charity—much oftener than you will find Christian names at a subscription for Jews.

Jews buy that which would otherwise be thrown away, and so far they are useful; and though they sell things that are not of much worth, people have eyes, and if they will not use these, they must blame their own indolence, and not the Jew. Besides, in spite of all our headles and policemen, our way-sides and lanes are infested with Christian beggars—but who ever saw a Jew begging? They never beg; the diseased and the maimed are comfortably supported; and all the rest, from the very moment they are able, are instructed and encouraged to do something. Go to the Jews' annual dinner, and see if you find equal kindness, either to one another or to strangers; at any other meeting for a similar purpose. Go to the Jews' Hospital at Mile End, and say, that in point of regularity, industry and usefulness, has it a superior among the countless institutions of the metropolis. We should love the Jew: he is worthy of being seen twice.

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THE GUIDE TO KNOWLEDGE.

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AUTHOR OF "PINNOCK'S CHARTS," "GRAMMAR OF GEOGRAPHY AND HISTORY," ETC., ETC.

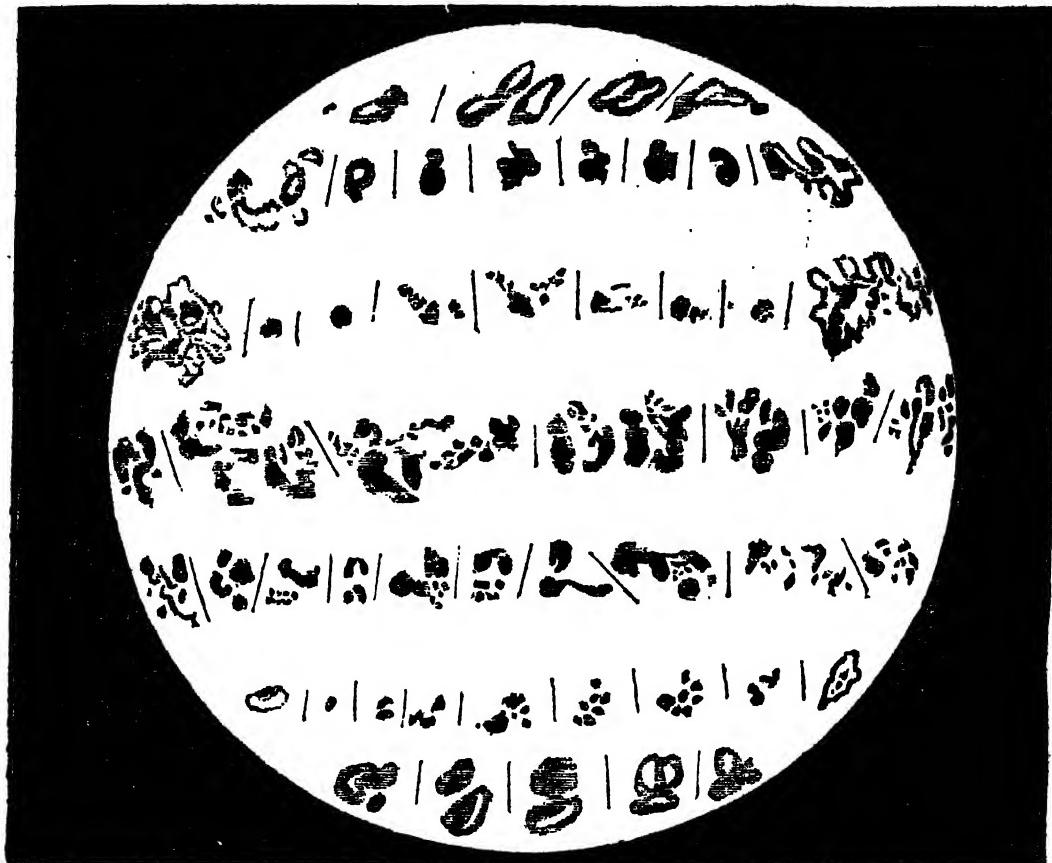
No. XIV.

SATURDAY, SEPTEMBER 22, 1832.

PRIOR
ONE PENNY.

A MORE PARTICULAR ACCOUNT OF THE PLANETS.

THE SUN.



TELESCOPIC VIEW OF THE SUN, exhibiting the daily appearance of several remarkable spots which have, at different periods, appeared upon his surface. The lines | indicate the appearance of a spot for one day; and so on successively.

THE SUN is that glorious luminary which sheds light and heat on all the surrounding *orbs*, is also the source of vegetation, and the prime cheerer of the animal world. This great luminary was generally considered by the ancients as a globe of pure fire; but, from a number of dark spots, which, by means of a telescope, may be seen on different parts of his surface, it appears that this opinion was ill-founded.

Those who are not accustomed to astronomical calculation, will be surprised at the real magnitude of this luminary, which, on account of his distance from us, appears to the eye not much larger than the moon, which is only an attendant on our earth. When looking at the Sun, we are viewing a globe, whose diameter is 890,000 English miles, whereas that of the earth is no more than

7970 miles; so that the sun is about 1,392,500 times larger than the Earth. It is reckoned to be 539 times larger than all the planets put together. Thus, as it is the fountain of light and heat to all the planets, so it also surpasses them in its bulk. And in proportion as science has advanced, and more accurate instruments have been made, the magnitude of this luminary has been found to exceed considerably the limits of former calculations.

The general opinion concerning the solar spots is, that they are occasioned by the smoke and opaque matter thrown out by volcanoes, or burning mountains, of immense magnitude; and that when the eruption is nearly ended, and the smoke dissipated, the fierce flames are exposed, and appear like *fires*, or luminous spots.

The often-mentioned term, "Via Solis," or "Sun's Path," originates from the sun's appearing to move from one sign to another in the *ecliptic*; but, in fact, it is the Earth which moves in the *ecliptic*; and, as the sun is always diametrically opposite to the earth, he appears to occupy that sign which is in reality occupied by the EARTH.*

Though the *Sun* is the central body of the System, the various attractions of the circumvolving planets give it a small motion round the centre of gravity of the system.

The *light* and *heat* which the planets derive from the *Sun*, are always communicated in greater or smaller portions, not only in proportion to their distance from it, but according as its position is more or less oblique to any given part of the planet's surface. This is the reason that we, who live at such a distance from the equator, have the coldest weather when the sun is nearest to us viz., in the *winter*; for as the eccentricity of the earth's orbit bears but a trifling proportion to the distance of the *Earth* from the *Sun*, and, therefore, of itself can occasion no great difference of heat and cold to us in the different seasons, it will follow, that the remarkable difference we experience must be owing to the relative direction of the solar rays.

Thus, in winter, the Sun's rays fall so obliquely upon us, that any given number of them will not only fall with less force, but must be spread over a greater portion of our part of the Earth's surface. Besides, the Sun's continuance above the horizon is considerably shorter in the winter, and the nights are much longer; which must further contribute to increase the cold.

Some may imagine from hence, that as the sun always gives most heat when his rays are most perpendicular, the hottest part of our summer should be when the *Sun* is in the first degree of Cancer; that is, towards the latter end of June. But experience tells us, that the weather is commonly hottest in the latter part of the summer. This may easily be accounted for as follows: When any part of the Earth's surface has been fairly heated, it will retain the heat for some time; and as the nights, which in the middle of summer are very short, increase but slowly, and the days are proportionably long, the heat of the Earth must be continually augmented in the day-time more than it is diminished in the night, till the *Sun* has declined considerably from the tropic in its return to the equinoctial. For this reason the month of July, and great part of August will be hotter than June, unless prevented by winds and rains; in the same manner as we generally find it hotter in the afternoon than in the forenoon. On the contrary, those places which have thoroughly cooled will require some time to recover their heat; so that the weather will be colder a month or two after the winter solstice than before it.

It is farther worthy of remark, that the Sun's rays are so much refracted, or bent down towards the Earth, by the atmosphere, at its rising and setting, as to bring it in sight every clear day before it reaches the horizon in the morning, and keep it in view for some minutes after it has descended below it in the evening. At some times of the year, we see the Sun ten minutes longer above the horizon than we should do if it were not for this circumstance, and about six minutes every day at a mean rate. It is the atmosphere also which is the cause of *Twilight*, which may be explained thus: when the Earth, by its diurnal rotation, has withdrawn the Sun from our sight, it still continues to shine upon the atmosphere above us, from which the light is reflected to us, till it is 18 degrees below the horizon: after which, the part of the atmosphere above us, which is dense enough to reflect its rays, loses them entirely, and it becomes dark. As the refraction of the Sun's rays will always be greatest where the air has the greatest density, that is,

where the climate is coldest, the *Sun* will appear larger above the horizon in such diameter; and the durations of Twilight will also be longer than it is usually computed with us; which is another instance of the great wisdom and benevolence of the Deity.

As the *Sun*, at his rising and setting, is seen through a greater quantity of atmosphere and more vapours, and thereby being seen more indistinctly, and yet without any diminution of his disk, he is naturally imagined to be much farther off, than at other times, when he is at a considerable height above the horizon, when he will appear much larger, as well as of dim and fiery aspect.

It is likewise observable, that just after his rising, and before his setting, he will appear of an oval figure; the reason is, because the refraction of his rays being always greater at the horizon than at any distance above it, his lowermost limb will appear to be proportionably more elevated than the uppermost, and by that means cause his vertical diameter to appear shorter than his horizontal diameter. Thus we have given a short account of the most remarkable phenomena of the *Sun*.

HISTORY OF ASTRONOMY.

(Concluded from page 100.)

About this period, several public institutions were formed for the propagation and improvement of science; and a different species of telescope, called the *reflector*, was invented by GREGORY, who contented himself with pointing out how it might be constructed, and left the actual construction of one to the illustrious SIR ISAAC NEWTON, than whom no one stands higher in the catalogue of benefactors to the cause of LEARNING.

Sir Isaac Newton not only completed a *reflecting telescope*, from the hints given by Gregory, but greatly improved upon them, as did David Gregory and Euler; but as the imperfection of the *refracting telescope* was in great measure removed by DOLLAND, about the beginning of the eighteenth century, reflectors are now seldom used.

L'ABBE PICARD was another eminent astronomer of modern times, and, by discovering an accurate method of measuring a degree of a great circle of the *Earth*, rendered it easy to ascertain, with considerable precision, the whole circumference of it. The discovery likewise, by RICHTER, that the pendulum* performed its oscillations † slower at the equator than near the pole, suggested to Sir Isaac Newton the idea which has since been confirmed, that the equatorial diameter is longer than the polar; and, consequently, that the globe is an oblate spheroid,‡ or flattened at the poles.

In the beginning of this century, GRAHAM, a celebrated mechanician, made many valuable and accurate instruments for the Royal Observatory, at Greenwich, particularly a zenith vector of twenty four feet radius, and another of twelve and a half feet, with which Dr. BRADLEY discovered the aberration§ of the fixed stars. HEDLEY'S improved reflecting telescope, and the quadrant and sextant which bear his name, have given him a place amongst the eminent cultivators of this science.

So zealously have modern astronomers directed their attention to the improvement of telescopes, that their powers have been in-

* Any weight hung so that it may be easily swung backwards and forwards.

† The act of moving backwards and forwards.

‡ So called from two Greek words, signifying the resemblance of a sphere.

§ The act of deviating from the common track.

creased to an amazing degree. By means of reflectors of his own construction, the late Sir W. HERSCHEL made many valuable discoveries, and it is yet impossible to say how far these improvements may be carried. Our posterity will, probably, become acquainted with the nature of the moon's surface, and discern her cities and towns, and even her inhabitants, if such really exist. In the beginning of the eighteenth century, HORNEMER, having observed that the eclipses of Jupiter's satellites happened sometimes sooner, and sometimes later, than the time calculated and set down in Cassini's tables, inferred that this difference arose from the greater or less distance of Jupiter from the Earth; from this circumstance, he was enabled to ascertain that light had a progressive motion of nearly 200,000 miles in a second of time. Numerous observations have confirmed the truth of this discovery.

Few names amongst celebrated astronomers stand higher than that of FLAMSTEAD, who was appointed astronomer royal by CHARLES II., and intrusted with the care of the Observatory at Greenwich. Among his other valuable labours, was a catalogue of 3000 stars, with their places. He died in 1719, and was succeeded by DR. HALLEY.

CASSINI, Astronomer Royal of France, was well skilled in the science; he is celebrated as having drawn a Comet Meridian line in the church of S. Petronius at Bologna. The son, grandson, and great-grandson, of this philosopher inherited their ancestor's talents, and successively filled the honourable station to which he was first appointed.

DR. HALLEY having been sent to St. Helena, to form a catalogue of the stars in the southern hemisphere, published the result of his labour in 1679; he made many interesting observations of the moon; and successfully predicted the appearance of a Comet in 1758.

The dispute between NEWTON and CASSINI, respecting the figure of the Earth, the former representing it as an oblate spheroid, or flattened towards the Poles, and the latter, a prolate spheroid, or protruded at the Poles, being undetermined, LOUIS XV. sent out two parties of astronomers, to measure two degrees of a meridian, one, near the Equator, and the other within the Arctic circle; the result of the expedition fully confirmed the truth of Newton's theory, and set the dispute at rest for ever.

Besides the aberration of the fixed stars, called the precession of the equinoxes, already mentioned as having been discovered by DR. BRADLEY, that eminent astronomer observed, that there was an annual change of their declension; after diligently investigating the cause of this phenomenon, he attributed it to a kind of libratory* motion of the Earth's axis, occasioned by the inequalities of the action of the Sun and Moon, according to their situations, with respect to the Earth, and to each other.

In 1769, the Rev. DR. NEVILLE MASKELYNE was appointed Astronomer Royal; about this period great improvements were made in astronomy, and in its application to valuable purposes. CANTRELL, ERNST, and MEYER, composed complete sets of *Lunar Tables*, and as those of Meyer were considered the most accurate, he was presented by the Board of Longitude with 3000*l*, as the reward of his labours. WARGENSTEIN, a Swedish astronomer, made many valuable observations on the satellites of Jupiter; and DELA CAILLE composed an excellent set of *Polar Tables*. He likewise took a voyage to the Cape of Good Hope, to correct the catalogue of the stars in the southern hemisphere, to determine their situations with accuracy, and to discover the parallax of Mars, the Moon, and of the Sun.

The period now approaching when *Venus* would traverse the Sun's disk, astronomers were sent to different countries, to observe this phenomenon, which took place in 1769; a similar event, predicted by Dr. Halley eighty years before, had taken place in 1761, and had been diligently attended to; the result of these different observations was, that the parallax of the Sun is about eight and a half seconds, and, consequently, that his distance from the Earth is ninety-six millions of miles. In 1761, Dr. Maskelyne was sent to St. Helena, to observe the transit of *Venus*, and the parallax of *Sirius*; and though from some unforeseen accidents he did not succeed in the primary objects of his voyage, he enriched science with many interesting and useful facts collected by him from diligent observation. One service he rendered to navigation was the introducing among seamen the method of finding the longitude by the lunar distances, with Hadley's quadrant. He also took a voyage to *Barbadoes*, to settle the longitude of the place, and to try Harrison's time-keeper, and Irwin's marine chain. On his appointment to the post of Astronomer Royal in 1763, he proposed to the Board of Longitude the publishing an *Ephemeris*, or Nautical Almanac, for facilitating the practice of the lunar method; it was accordingly published in 1767, and has been continued ever since, to the great benefit of navigation.

The name of HERSCHEL is high in the annals of astronomy; he constructed more powerful telescopes than had been in use, and from his indefatigable and accurate observations, corrected many errors that had obtained for ages, and made discoveries that astonished mankind.

March 13, 1781, Dr. Herschel discovered that a star, which had been many years before observed by Flamstead, and considered by him as fixed, was, in reality, a planet revolving round the Sun at the distance of eighteen hundred millions of miles. This planet he named *Georgium Sidus*, in honour of GEORGE III., king of Great Britain, but it is now generally denominated *Uranus*. At different times, he discovered six satellites attending on this new world, which revolve round him in a direction contrary to that of the satellites of the other planets.

To enumerate all the discoveries and improvements made by Sir William Herschel, who received the honour of knighthood for his services in the cause of science, would be to form a volume instead of a sketch. Amongst other proofs of his sagacity, he has given rules for measuring the height of the lunar mountains, which show that they are not so disproportionately large, as was generally believed, none of them exceeding half a mile in height; and he has given solid reasons for believing that the immense globe of the Sun is not fire, but an opaque habitable body, furnished with a luminous atmosphere, possessing such properties as to communicate light and heat to the system of worlds, of which he is the centre. This great man died in 1822.

About the commencement of the nineteenth century, four new planets were added to the list of those already known. CERES, discovered by PIAZZI, an Italian astronomer at Palermo, in Sicily; PAULES, by DR. OLEIRS at Hamburg, in 1802; JUNO, by MR. HARDING at Lilienthal, in 1804; and VESTA, by DR. OLEIRS in 1807; their respective magnitude and periods are not as yet very accurately known, their orbits all lie between those of Mars and Jupiter.

It would seem as though, from the great discoveries that have been made by astronomers since the invention of the telescope, that little remains to be known, within the compass of man's abilities to obtain; but the Heavens are a vast book, and men are indefatigable students, who succeed in turning over new leaves, when such a circumstance is expected.

* Balancing; playing like a balance.

MERCURY—g.

First verging on the lucid fount of day,
Bright Mercury directs his circling way;
In three short months he rounds the solar sphere
His seasons shift, and ends his transient year.

MERCURY, the nearest planet to the sun, moves round him in eighty-eight days of our time, which is the length of his year. His distance from the sun is computed at 37,000,000 of miles, and his diameter at 3000 miles. In his course round the sun, he is supposed to move with a velocity equal to 109,000 miles in one hour. But what is this in comparison to the velocity of the rays of light, which dart at the rate of 180,000 miles in a second?

From the time of his superior* to his inferior† conjunction, he rises and sets after the sun, and then appears only in the evening; but from his inferior to his superior conjunction, he rises and sets before the sun, and consequently is visible only in the morning.

According to the most eminent astronomers, the light and heat of the sun on the surface of Mercury, are seven times more intense than on the Earth, in the middle of summer. Such a degree of heat must therefore render *Mercury* uninhabitable by beings of the same composition with ourselves; but, as the Almighty can with the utmost facility adapt bodies to the temperature of the planets they inhabit, we must reasonably conclude that MERCURY is peopled as well as our earthly globe.

Few observations can be made on him with accuracy, because, in consequence of his proximity to the sun, his feeble ray is almost lost in the superior splendour of that great luminary. When at his greatest distance he is only twenty-seven and a half degrees from the sun, and at other times is so near as to rise and set at almost the same moment. The measure of a planet's distance from the sun is called its elongation.

The best time for making the most favourable observations on this planet is, when he passes before the sun, and is seen traversing his disk in the form of a black spot. This passage of a planet over the face of the sun is called its *transit*. The colour of *Mercury* is like that of *Venus*, but much brighter. If at any time we see a bright silvery-looking star, near the place of the sun, just before sunrise in the east, or in the west, soon after sunset, with a fine clear light and great lustre, it is *Mercury*.

The great velocity with which *Mercury* moves in his orbit, probably induced the GREEKS to give him the name of the Messenger of the Gods, who is aptly represented with wings on his cap and sandals, emblematic of the swiftness with which he flew to execute their commands.

The last transit of *Mercury* happened on the 5th of May, in the present year. Other transits will happen on the 7th of November, 1835; May 8th, 1845; May 9th, 1848; November 12th, 1861; November 5th, 1868; May 5th, 1878; November 8th, 1881; May 10th, 1891; and November 10th, 1894. These are all which will occur in the present century.

VENUS ♀.

See *Venus* next reveals her pleasing ray,
Now leading on, now closing up the day,
Term'd *Phosphorus*, when her morning beams she yields,
And *Hesperus*,|| when her ray the ev'ning gilds.

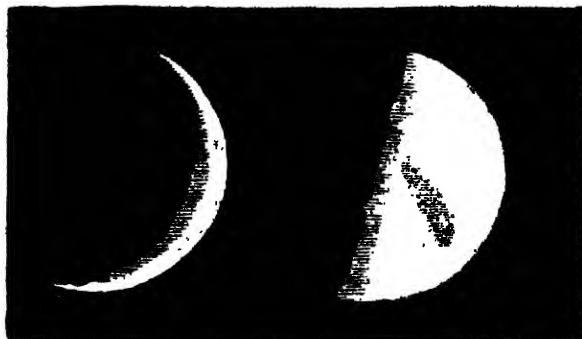
VENUS, the second planet from the Sun, is the next that comes

* Upper.

† Lower.
‡ The meeting of the stars or planets in the same degree of the zodiac.

§ Or *Phosphorus*.

|| Or *Hesperus*. These names are often used in poetry.



TELESCOPIC APPEARANCE OF VENUS.

under our consideration. Of all the planets this is the most beautiful, and is distinguished from the others by a superiority of lustre. She is distant from the Sun not quite 69,000,000 of miles; she revolves round him in two hundred and twenty-four days, seventeen hours, and turns on her axis in twenty-three hours, twenty-two minutes; so that her astronomical day differs but little from that of the Earth.

The diameter of *Venus* is 7743 miles, she is, therefore, about nine-tenths of the bulk of the Earth. Her velocity in her orbit is 80,295 miles per hour; her diurnal rotation is at the rate of 1943 miles in the same time.

As *Venus* is an interior planet, for the reason before mentioned, she appears to change precisely in the same manner as the Moon and *Mercury* do. Her greatest distance from the Sun never exceeds forty-eight degrees, so that she is never seen in the east when the Sun is in the west, nor in the west, when the Sun is in the east.

Hence, according to her position, in regard to the Sun, she is seen sometimes in the morning before his rising, when she is called *Phosphorus*, or *Morning Star*; and sometimes after the Sun's setting, when she obtains the name of *Hesperus*, or the *Evening Star*. Or, in other words, when *Venus* is west of the Sun, she rises before him, and is then called the *Morning Star*, and when she is east of him, she sets after him, and is denominated the *Evening Star*: this continues from one conjunction to another, a period of nearly 584 days.

It may seem extraordinary that, while *Venus* performs her revolution round the Sun in 294 days, she should require 584 to pass from one conjunction to another. But it must be remembered, that the Earth revolves the same way, though not with such rapidity, so that *Venus* must make more than two revolutions before she can be in such a position with respect to the Earth and Sun, as to be again in conjunction with the Earth.

All the planets vary in their apparent* diameters according as they are nearer or farther from the Earth. In *Venus* the difference is very great, no less than thirty-two to one; that is, she appears thirty-two times larger at one particular period, than at another particular period; and shines with a lustre that renders her visible many hours after the Sun has arisen upon the Earth.

Spots may be seen on the disk† of *Venus*, which, being permanent afford the means of ascertaining the time of her rotation on her axis; and, when viewed through a good telescope, she exhibits all

* Being here applied to shape or form, apparent means seeming, in opposition to real.

† The appearance of the body of the Sun or planets, which is divided by astronomers into twelve parts.

the various phases* ascribed to *Mercury*. She sometimes passes exactly between the Earth and Sun, and is seen like a round black spot passing over his disk, which is called a "Transit of Venus." This happened only twice in about a hundred years,† but the transits of Mercury happened much oftener.

Venus, from her singular beauty, is, and ever was, the most admired of any star, both by land and sea; and such great veneration had the ancients for her, that they made her their favourite goddess, and gave her all that deity itself could claim. As *Venus*, like the rest of the planets, receives her light from the Sun, she has all the various appearances of the Moon, being gibbous, horned, and full, in rotation. The days and nights in the regions of *Venus* are nearly equal, except at her poles; her axis being nearly at right angles with the plane of her orbit. The heat on the surface of this planet must be twice as great as with us, though far more moderate than that on the surface of *Mercury*. As neither *Venus* nor *Mercury* has any attendant satellites, it is probable that the benevolent Creator of the World has ordained that the *Sun*, to which they are so near, should supersede the necessity of a secondary light. The inhabitants of *Venus* will see the planet *Mercury* always accompanying the *Sun*; and he will be to them, by turns, an evening or a morning star, as *Venus* is to us. To the same inhabitants, the *Sun* will appear almost twice as large as he does to us. One would not imagine, that this planet, which appears so much superior to *Saturn* in the Heavens, is so inconsiderable when compared to it: for the diameter of *Saturn* is 79,600 miles, while that of *Venus* is only 7743 miles. It is the distance that produces these effects; which gives and takes away the apparent magnitude of things. Now, remember (which has been observed before), that the apparent size of *Venus* varies with her distance; at some seasons she appears nearly thirty-two times larger than at others.

Again, one would scarcely imagine, that *Venus*, which appears but as a lucid spangle in the heavens, was so large a globe as she truly is.

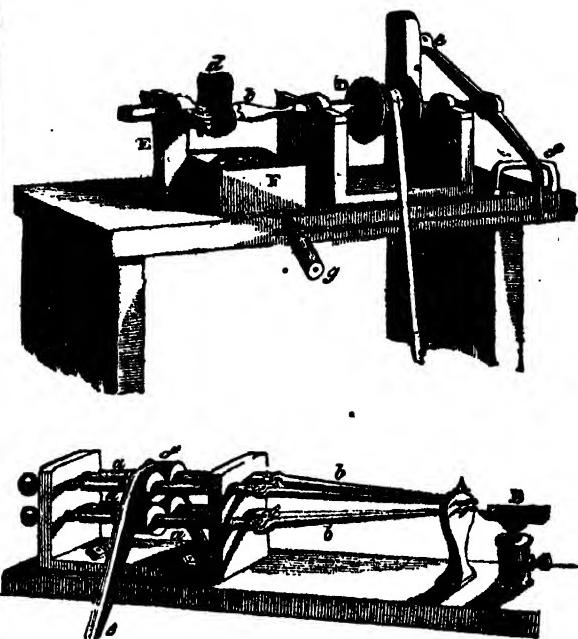
BRITISH MANUFACTURES.—IV.

BUTTON MAKING.

In no case are the advantages which result from a division of labour rendered more apparent than in the one now before us. A button, which by the aid of tools, and the ingenuity of five or six workmen, is now made for less than one farthing, would, if entirely executed by one individual, cost at least twenty times that sum. Indeed, we lately saw exhibited a species of gilt buttons for ladies' dresses, which were sold for *ninepence per gross*; while in the same shop, a less ornamental article manufactured by one person, because it was less in request, was marked at the rate of sixpence each, or nearly one hundred times as much more.

Buttons are comparatively of modern invention. In the sixteenth century, they almost invariably used *strings* with *tags*, called *points*. In Shakespeare's time, they were used indiscriminately; as, in one passage, we find a lawyer described as having silken points,

as well as legal ones; and in a later play, *Lear* is made to request his attendant to undo a button on his dress.



Buttons are made of a variety of materials; we may commence by describing those formed of bone, horn, and metal. The first of our engravings represents a very valuable though simple machine for cutting the body of the button from the plate of which it originally forms a part. It consists of a table supporting a sharp cutting instrument *b*, to which motion is given by the axis, pulley and band *D*. The material to be cut is seen at *d*, resting against the fixed upright *E*. Now, if we suppose motion communicated by the foot, as in a common knife-grinder's lathe, and the cutter *b* made to revolve, it is pressed up by applying power at the handle *g*, which resting at *f*, turns on the axes *c*. By this means, the circular disks are cut with a degree of rapidity, scarcely conceivable to those who have not witnessed the operation; indeed they may be cut and transferred to the tray at *F*, much faster than they can be counted.

The next process is to pierce them with holes, and this is effected by four drills, shown in operation in our second figure. In this as in the former case, motion is communicated by a wheel and pulleys and band *a f e*. The drills *b b* are attached by small hooks, which form universal joints, and meet nearly in contact with each other at *A*. The circular groove *B* is intended to receive the buttons which are thus pierced almost as fast as they were cut by the previous process.

The more ornamental metal buttons are struck by means of a screw-press, similar to a common book-press. Immense balls, supplying the place of the extremities of the common handle, are put in motion by a steam-engine or other machinery, and the metal being brought in contact with a steel punch, is at once struck into the required form.

Brass buttons are usually *water-gilt*. This term, though very common, conveys a very erroneous notion of the process, which may be thus briefly described:—gold is readily dissolved in mercury or quicksilver, and the workman having prepared an amalgam of these metals, slightly coats the surface of the button with it. He afterwards places the button in a charcoal furnace, and the heat va-

* The several appearances of illumination observed in the planets. (*Phasis singularis*, phæsoe, plural, Gr.).

† One was seen in England in 1639; and two in the last century, the one in 1761, and the other in 1769. There will not happen another till December 9th, 1874; and the other in December 7th, 1882, and these are the only ones that will happen in the present century.

utilises the mercury, which ascends the chimney in the form of vapour, leaving the gold on the surface of the button. By a similar process to this it is that the jeweller gilds the surface of ornamental trinkets; and if we wish to ascertain whether they be gold or only washed with that metal, it is only necessary to rub the article under examination on a piece of slate or stone, and then put a drop of nitric acid on the place. If it be gold, the colour will remain unacted on by the acid, but if it be base metal, a strong green tinge will be produced.

Mr. Barton, of the Mint, has invented a very beautiful species of ornamental button, which is said to be formed of iris metal. The process for giving this beautiful iridescent surface may be thus described. The metal is in the first instance polished perfectly smooth and bright. It is then placed in a machine, and fine lines ruled over the entire surface at about the two thousandth of an inch apart. The light, which falls on a surface thus serrated, is immediately decomposed, and all the colours of the rainbow will appear to play on the face of the metal. We are indebted to Dr. Brewster for having first called attention to this mode of producing a coloured surface, and he was led to a knowledge of the fact by examining the surface of *mother of pearl*. He found that he could produce the same effect by sealing-wax when melted on the surface of iridescent shell, and with this hint in view Mr. Barton contrived to manufacture his beautiful buttons. The metals are not the only substance of which buttons are manufactured; large quantities are made of glass, mother of pearl, shell, and slate. The first are composed of glass of various colours, in imitation of the opal, lapis lazuli, and other precious stones. The material is in this case kept in a state of fusion and the button nipped out of it whilst in its plastic form, by a pair of iron moulds, similar to those used for casting pistol-shot, and adapted to the intended form of the button; the workmen previously inserting the shank into the mould so that it may become imbedded in the glass when cold. The mode of fixing in the shank in buttons of mother of pearl is somewhat ingenious. A hole is drilled at the back which is undercut, that is larger at the bottom than at the top, and the shank being driven in with a steady stroke, its extremity expands on striking against the bottom of the hole, and it becomes firmly riveted into the button. In the year 1790, a patent was granted to Mr. Henry Clay, of Birmingham, for a new method of manufacturing buttons of slate or slit stone; and in 1800, Mr. Joseph Barnett, of the same place, obtained a patent for an improved mode of making buttons by fixing two shanks on one button, one on each side on the under surface, instead of only one in the centre.

It is an amusing fact that not many years since, the practice of wearing buttons consisting merely of a mould covered with the same kind of cloth as the garment itself on which they are placed, was prohibited on pain of pecuniary penalties of from forty shillings to five pounds per dozen, by several statutes made expressly for the purpose of protecting this manufacture.

A slight reference to the processes we have now been describing, will serve to convince any unprejudiced mind, how essential it is that the manufacturer, even of so common-place an article as a *button*, should be acquainted with the general principles of science. Its form cannot be accurately given without an acquaintance with the mechanical powers. Neither can the metallic surface be gilt with safety to the workman, if he be unacquainted with the leading features of chemistry. Unluckily, however, this is not the case, and the water-gilder is generally seen with palsied and trembling limbs, produced by the vapour from the mercury. If he understood the action of this deleterious vapour, he would, instead of inhaling it, ensure such a current of air in the neighbourhood of the furnace, and directed towards its chimney, as effectually to prevent any mischievous effects.

MNEMONICA, OR HELPS FOR THE MEMORY.

(Continued from page 101.)

As order and system are the best methods for providing the means to preserve MEMORY; so, in the exercise of it, a train of ideas, or connected links, should form the whole chain that is to draw up the latent images from the profundity of the MIND; but there must be a staple or hook to this chain, holding on to some point where the involutions are to begin, that is, some leading idea must attach to the mind, that the whole may not be entirely sunk in oblivion; thus, if I am to remember the peculiarities of any object, that object must itself, in the first instance, have an insertion in the *mind*; I most recollect that I have seen it, then follows the consequent circumstances, its shape, colour, magnitude, situation, texture, use, &c.; from all and each of which properties deductions spring forth, and are multiplied: there is a succession from the first pull at that link which draws after it another and another, till the whole chain is coiled round the windlass* of our MEMORY; but if we have not the first idea, how shall we command the second, or third; we cannot tell the shape, &c. of any thing we do not remember to have seen; the first effort, therefore, is, to begin with the simplest fact, which will always be a leading topic to the rest. A curious property of the memory is observable by the circumstance of our remembering events of many years standing, or long passed away, whilst we forget recent things, and even occurrences of yesterday; this arises from similitudes, presented to the external senses, *a sage* of eighty sees a child at play, and not only remembers that he once did the same, but also, through this leading topic, the whole scene of his juvenile days recurs to his MIND; his playmates (otherwise long since forgotten), his pleasures, his vexations, his aversions, and affections, they all follow the link that first struck into his mind, and bring a mournful train of reminiscences, on which, however, MEMORY dwells with a delight, drawn from regret, as the *bee* sucks honey from a thorn. A man says, he has a treacherous memory, and thus excuses himself for neglecting his duty, or disappointing his friends; such an apology is often an insult to common sense, he has not duly impressed his memory, or he has not regarded the record that memory offered to his notice; all men have certain offices to fulfil, and no obligations are more binding than the performance of our promises; let a man take but a slight retrospect of a time past, considering to what, and to whom he is engaged, and these governing memoranda will not fail to call up all their dependants and followers; the simple fact here, is a duty, then succeed, when, how, and where the performance is to be executed. The propriety of not crowding the memory with a promiscuous collection of ideas will be manifest in the experience of those who have seen a torrent of rain fall on the parched ground; it runs off in rapid currents, and leaves the earth nearly as draughty as before; seldom penetrating far into the soil; but slow and continued showers, insinuate deeply and moisten it entirely; feeble minds, in particular, should, by simple and leading ideas, be guided to habits of retentiveness, certain plain and evident axioms should guide to more complicated conclusions. If we desire a young, or uninstructed person to describe the construction of a right-angle triangle, and to demonstrate its properties from a diagram of the figure, we must begin with some simple fact, such as that a right line is drawn

*. Used figuratively, a handle by which any thing is turned.

directly from a point to another point, that right lines meeting in a point make an angle, that one straight line falling perpendicularly on another, makes a right angle on each side of it, and that four equal lines at right angles make a square, which square divided by a diagonal, or line passing from angle to angle, will make two right angled triangles, &c. All this must be deduced from some simple leading fact, which fact will, *seriatim*, go on to the next. If we ask a child how it is proved that three times three makes nine, the answer will be, because it is in his table; and he knows of no other proof; but first ask him how many three and three make, he will readily calculate 6; then, three more he will answer nine. Ask him next how many threes he has reckoned, he will count them, and reply, there are three. Hence, from the first simple fact, that three and three, and three, are nine, follows the inference, that three times three are nine, and so on to higher numbers. It is not in children alone that a confusion of ideas destroy the memory; it also affects the mental energies of even the most talented men, and was undoubtedly the cause of the total failure of MR. ADDISON, author of the *SPECTATOR*, in his attempt to become a parliamentary orator; he lost himself in the dazzling splendour of his own imagination, and could not grasp the simple leading ideas of his intended harangue.

Thus it appears that the retention of a few leading facts will enable us to treasure up a store in the memory, and that by proper arrangement we need never be at fault, or complain of a faculty God has given us more perfect than we are solicitous to improve.

THOUGHTS ON SLEEPING.

It is astonishing with how little reflection we resign ourselves to sleep. We speak of death with a feeling of dread almost amounting to abhorrence; and yet to its twin brother sleep, we yield ourselves up with the most thoughtless and careless levity.

Whether we reflect upon its value or upon the oblivion into which it casts us, sleep should be considered with the utmost attention and seriousness.

As to its value, a single night of the restlessness of sickness, or the watchful agony of fear or sorrow, is amply sufficient to give us a lively idea of that. When unbroken health and undisturbed serenity of mind render sleep the regular and unwooed attendant upon our nights, its value can only be appreciated by due reflection. And to make that reflection is a most solemn and indispensable duty. We should endeavour to imagine, and it is but faintly, that we can succeed in doing so, how miserable in body and disturbed in mind we should be, were we deprived of the power to sleep. The reflection will teach us to feel that value for sleep, and that gratitude for our enjoyment of it, which the mere thoughtless of our race can only be made to feel, by the troublesome contrast of being deprived of it.

When we consider the deep and deathlike oblivion into which we are cast while sleeping, we cannot fail to see that the act of resigning ourselves to sleep is one which demands our most serious reflection and most anxious preparation. When we are about to lie down to sleep we ought to consider that it may be that we shall rise up no more in mortal consciousness. The temporary oblivion of sleep may be the passage to the silence and corruption of the grave. For a change so possible, nay so probable, and a change so awfully important, we ought to prepare ourselves every night ere we lie down to rest. We *may* wake again, indeed, but we *may not*. The event is not in our own power or within our own powers of calculation. We ought therefore to be prepared for the worst.

We ought to lie down in such a frame of mind as though we were certain that in resigning ourselves to the soothing and stealthy embraces of sleep we were for ever giving up our mortal existence.

It is not, surely, too much for us to feel grateful for one of the greatest blessings we enjoy, and to feel anxious about one of the most important actions we perform? This gratitude and this anxiety are all that we have endeavoured to impress upon the minds of our young readers.

Chronology and Geography are called the two eyes of history, because history can never be clear and well understood without them.

PHILOSOPHY OF THE STREETS OF LONDON.

THE DUSTMAN.

HERE comes "dusty Bob," with his bell, ringing with all his might, and bawling "dust ho!" so loud, that one would think he were at a wager with the bell, who shall make the loudest noise. The horses, too, have bells on their collars, and the whole street is clank and clatter; so that the sound seems calculated not merely to call the housemaids from their scrubbing and gossiping, but to call the very dust itself into motion; and, if we did not know his trade and his purpose, we should think that the dustman came to raise dust rather than to remove it.

But, notwithstanding all his noise, the dustman is a very useful member of society; and—if we except his white cotton stockings, which are not the very best adapted to his purpose in colour, though they keep his legs cooler under his heavy loads than any thing else would do—he is well equipped for his calling. That great felt hat, which is flat to his head, and lies over his shoulders like a turf, is absolutely as thick as a board, and that, with his tarpaulin jacket, with the double or triple part on the back, keeps him from being bruised; and it is all the better when, after being a little worn, he has it covered with painted canvas. The white cotton stockings are worn by the very men to whom one would at first suppose they are the least fitted; but as dustmen, draymen, and coal-heavers generally wear them, there must be something more than mere fashion in the matter, as all the other parts of their dresses are very nicely fitted to their occupations. These men all have to climb up steps, and run along planks and gangways, with very heavy loads; and as the load is in most instances upon their shoulders, it is of the utmost consequence that they should be very firm on their legs; for if they were to swing to a side with their burdens, they would tumble, and the burden would fall upon, and hurt, and possibly kill them. That is the principal danger to which they are exposed, and they, of course, take precautions to guard against it.

Now, though the white cotton stocking may, to a mere surface observer, appear in no way to answer that purpose, yet they do answer it, and that to a very considerable extent. In order that any part of the human body may be firm and steady to its work it is necessary that it should be kept always as near as possible at the same degree of heat; and that heat should be as nearly as possible the natural heat of the body in a state of health, or what is called "blood heat." Any one may see that, by the difficulty found in writing, or doing any thing else in summer, when the hands are very warm, or in winter when they are pinched with cold; and it is a well-known fact, that people who are often warm-



ing their hands at the fire never work either fast or well. The hands are made too hot, which swells them beyond their proper degree, and makes them cool faster. At the same time, the cold air drains the moisture out of them; and the papillæ, which form the little ridges on the fingers and palm, lose so much of their sensibility, that a strong and neat hand will, by too often warming it, become a weak and clumsy hand. The hand is the very best tool with which we work, and, therefore, though it is seldom taught there cannot be a more useful piece of practical knowledge, than how to keep the hands in the best condition. White gloves are best for hands that are to do nice work, because they are cool in summer and warm in winter, whereas dark-coloured gloves are just the reverse. Gloves of cotton in cases where they are not to get wet on the hands are, perhaps, better than any others; and they have the advantage of being cheaper; — may have a clean pair of white cotton gloves every day, for little more than the price of a new pair of dark leather ones every month.

But we are forgetting the Dustman. He, and the other burden bearers, do not need to pay much attention to their hands, because their work is rough, and consists in grasping rather than in touching. But then, they must pay a great deal of attention to their legs, as these are the principal instruments of their work, and they have great need to be steady on them. Now the white cotton stockings preserve an equal temperature in the legs, just in the same manner as the white cotton gloves do in the hands; and it is remarkable, that notwithstanding their heavy loads and their round shoulders which they get in consequence of stooping, these white-stockinged men are remarkably clean limbed, and their ankles seldom or never swelled. Thus we have a lesson, and a very useful lesson, from Dusty Bob's white stockings, which shows us that we may learn any where—if we will.

Nor is what has been mentioned the only lesson that we may learn of the dustman; for though both noisy and muddy, he is withal a most instructive personage. That dust which he carries away, and carries away for nothing, is not only useless, but a perfect nuisance where it is; and if it were to be allowed to accu-

mulate for a single year—nay, even for one month, a great city like London could not be inhabited; the houses would be absolutely filthy, and one would be up to the knees in mud in the streets. But that which is worse than useless to other people, is wealth to the dustman; and that portion of matter which the activity of a million and half of human beings, is continually reducing to the end of all material things—dust, the dustman turns to gold. Valuable matters are sometimes said to be “lost in the dust-hole,” and found again by the dustman not very honestly; but in the mean time we shall pass over these, for Bob is an honest fellow, and his master is a man of property and character; so that if he found a silver spoon in the dust, he would restore it to the rightful owner.

What then do they make of the dust? It answers many purposes. There is a good deal of coal-dust and cinders in it; and these form what is called “breeze,” and is one of the materials of bricks; so that new houses are in part made out of the very sweepings of old ones. Then there are old tin pans and kettles, and bits of pewter, and brass, and iron, in the dust; and there are also pieces of broken crockery and glass. The tin, and copper, and brass, and all the metals that can be made new again by melting, more cheaply than they can be originally smelted out of the ore, are collected and sold to the founder. The old iron when in moderate pieces goes back to the smith's forge, and is made into new articles, which are all the better for its being in small pieces. If it be too thin for bearing the proper degree of heat without burning away, but still be whole and tough, it is sent to workmen who cut it into shapes, japan it, and sell it to the trunk-makers, who, to appearance at least, strengthen the corners of their boxes with it; and if it be too bad for that purpose, it is dissolved in acids and forms black ink, black stain, and black dye. Sometimes the tinman's chips, and the old pans and kettles, are laid down as a bottom for roads, or for the street pavement; but that is a very foolish plan, it is a waste of the materials; and as they are elastic, so bend under carriages, and also retain water, such roads and streets are bad,—heavy to draw upon, and sloppy when it rains. The broken crockery, on the other hand, is excellent for such purposes, if it be beat firmly together; for it is dry, and as it does not hold moisture, it acts as a sort of drain. When pounded small too, and mixed with the other materials, it very much improves the hardness and quality of bricks. The glass is collected, and sold to the glass-blowers; and their materials, especially for the finer kinds of glass, are all the better that there is a mixture of old glass in them. The bones which are in the dust, are useful in making ammonia, or what is called hartshorn, in furnishing oil for soap, and they may also be burnt for ivory black, or after the hartshorn has been distilled out of them, the remainder is ground in a mill, and makes excellent manure for the fields. If there are cotton or linen rags, they can be made into coarse paper, and woollen rags may be made either into ammonia or into soap. That part of the dust which cannot be applied to any of the purposes mentioned, may nevertheless be used for making up ground; and as it generally contains a portion of flintsand, brickdust, and pipeclay, it makes no bad brick earth. Thus the dustman is not only the means of keeping our dwellings clean and comfortable, but he actually puts us in the way of getting new houses out of the waste and rubbish of old ones. “Dusty Bob” is, thus, both a useful and an interesting fellow for all his dusty face and his noisy bell. We must not measure the real value of things by first appearances.

THE GUIDE TO KNOWLEDGE.

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THE WONDERS OF ANIMATED NATURE.



THE LION.

Of all animals, the outward form of the Lion is the most striking; his look is bold and confident; his gait proud; and his voice terrible; and from his great strength and agility, is usually styled the king of beasts. They generally reside in hot countries, for the most part in the torrid zone, and seem to partake of the ardour of the climate in which they live. His colour in general is *dun*, but not without some exceptions, as black and red. His head is large and very strong, his nose thick, his mouth wide, his eyes red and fiery. His large and shaggy mane, his ample eyebrows, and fiery eyes, which, upon the least irritation, glow with a fierce and glowing lustre, with the formidable appearance of his teeth, altogether form a picture of terrific grandeur, unparalleled in any other species of the animal creation. The formation of the eye is very similar to that of the cat; and the *former* cannot, any more than

the *latter*, bear a strong light, and, consequently, he seldom appears abroad in the day, but prowls about chiefly at night. Although he is accustomed to live in very hot climates, he cannot endure fire. When other wild beasts hear his terrible voice, all are surprised with fear, and dare not stir. As the sight of the Lion, notwithstanding the fierce sparkling of his eyes, is observed to be defective; and as all living creatures avoid him, he is, for the most part, obliged to have recourse to artifice to take his prey; and, therefore, like the *Tiger*, he bounds upon it from some place of concealment, as is shown in the engraving,* and on these occa-

* Here the Lion is in the act of springing upon an *Antelope*, an animal about the size of a large goat, but in shape more like a deer. They are generally found in herds, with scouts to give them notice of an approaching foe. Being very swift of foot, and too fleet for a greyhound, they are generally shot.

sions, easily makes a spring of eighteen or twenty feet. Sometimes he makes two or three bounds; but if he miss his object, he gives up the pursuit, returns to his place of ambush, and lies in wait for another opportunity.

We are not to be surprised, that an animal so strikingly majestic, and in every respect so terrible as the Lion, should, in all ages, have attracted the attention of travellers, and of those who delight in the chase; and, at the same time, have given rise to innumerable exaggerated and fabulous relations.) It has supplied images to poets and orators; and the fables, from their frequent repetition, have been admitted into the writings of naturalists, and been afterwards considered as founded in fact, by those who have had no opportunity of observing the animals themselves, and who have not had discrimination sufficient to judge correctly of the assertions of others.

We ought not, however, from these examples, to reject all the circumstances relating to this animal, which have not been verified by the moderns. They had many more opportunities for observation than the moderns have; and were thus enabled to observe many facts which may have escaped notice in latter times. Many countries were formerly infested by Lions, where none are now to be seen. It is well known, that they have long been extirpated from Europe; and yet, in the time of ARISTOTLE, they were found in all the mountains of the north of Greece, from the river *Nestus*, near *Abdera*, in Thrace, almost to the *Achelous* in Acarnania. According to HERONIUS, the camels that carried the baggage of the army of Xerxes, were attacked by Lions in *Peonia*, one of the countries of *Macedon*. PATRANUS, who records the same fact, adds, that these Lions often went southward as far as *Mount Olympus*, which separated Macedonia from Thessaly. At present, the Lion is by no means common even in Asia, if we except some countries between *India* and *Persia*. In short, in those countries which Lions chiefly inhabit, their numbers were infinitely greater in former times than they are at present. It is scarcely to be conceived how, otherwise, the ROMANS were able to procure the prodigious number of these animals, which, from time to time, they exhibited in their public shows. PLINY has supplied us with details on this subject, which almost surpass belief. "QUINTUS SCAVOLA," he says, "was the first who exhibited many of them at once in the *Circus*," during the time he was *Edile*."†

SULLA, in his *Praetorship* † had a hundred Lions, all males, to fight at the same time. Pompey afterwards had six hundred, of which, three hundred and fifty were males, and CÆSAR four hundred.—SENECA, it is true, informs us, that those of SULLA had been sent to him by BOCCUS, king of *Mauritania*, in Africa; but, at this day, the princes of that country consider one or two of these animals as a grand present. The same abundance continued during some time, under the emperors; but, in the second age, it appears to have begun to diminish, since EUTROPIUS then considered the appearance of a hundred Lions, in the triumphs of MARCUS AURELIUS, § as an exhibition of great magnificence. It

* *Circus*, a large and elegant building at *Rome*, where plays and shows were exhibited. There were about eight at *Rome*; the first, called *Maximus Circus*, was the grandest, and would contain 300,000 spectators.

† *Ediles* were Roman magistrates, who had the care of all buildings, baths, and aqueducts, and examined the weights and measures, that nothing might be sold without its due value.

‡ The office of a magistrate at *Rome*. The office of *Praetor* was first instituted in the year of *Rome*, 388.

§ *Aurelius*, emperor of *Rome*, after a glorious reign of six years, as he marched against the northern barbarians, he was assassinated near *Byzantium* (now *Constantinople*) A.D. 275.

was at length considered necessary to prohibit the combat of Lions in the mass, and to confine it to that of single animals, lest there should be a want of animals for the *Circus*. This law, however, was repealed by *Honorius* ;* the destruction continued, and the pursuing of Lions for the supply of the games, drove them to seek for security in the depths of the forests, where, to the present day, they still confine themselves.

This great supply of Lions afforded good opportunities for taming and domesticating some of the species, and consequently, their education was carried to such perfection, as to be truly astonishing. HANNO, † a Carthaginian, was the first who tamed a Lion; and he was condemned to death for what his fellow-citizens considered so great a crime: they asserted that the republic had to fear the worst consequences from a man who had been able to subdue so much ferocity. A little more experience, however, convinced them of the fallacy of that ridiculous judgment. The *triumvir*, ‡ ANTHONY, accompanied by the actress, *Cythereis*, was publicly drawn by Lions in a chariot.

It is not surprising that the ancients who saw so much of these animals, should in many respects have been better acquainted with them than we are: and that many facts, which now astonish us, did not escape their observation. Such, among others, is the facility with which a Lion in captivity, will attach himself to his companions, even though of a different species. AELIAN, § quoting *Eudemus*, speaks of the affection entertained by a Lion for a dog. He informs us, that a *Lion*, and a *dog*, and a *bear*, lived together in the most intimate friendship. The attachment between the two first was most tender. The dog, in one of his frolics having by accident bitten the bear, the natural ferocity of that animal returned, and he tore the offender to pieces, but the irritated Lion revenged the death of his companion, by immediately destroying the bear.

The reports of the ancients respecting the generosity of the *Lion*, his regard for weakness, and particularly the strength of his memory, are in many respects very extraordinary; and, though not perhaps entitled to unlimited credence, yet there is reason to sup-

* *Honorius*, an emperor of the Western Empire, succeeded his father, *Theodosius the Great*, with his brother *Arcadius*. He died A.D. 423. Under him and his brother, the Roman power was divided into two different empires, the *Eastern* and *Western*. This division of power proved fatal to both empires, and they soon looked upon one another with indifference and jealousy.

† This name was common to many Carthaginians, who greatly distinguished themselves among their countrymen, particularly during the Punic wars against *Rome*, and in their wars against the *Sicilians*.—(Livy.)

‡ One of three magistrates called the *Triumviri*, who were *three* magistrates appointed equally to govern the Roman state with absolute power. These officers gave a fatal blow to the expiring independence of the Roman people, and became celebrated for their different pursuits, their ambition, and their fortunes. Her first triumvirate, A.C. 60, was in the hands of *Julius Caesar*, *Pompey*, and *Crassus*, who at the expiration of their office, kindled a civil war. The second and last triumvirate, A.C. 43, was under *Augustus*, *Marc Anthony*, and *Lepidus*, and through whom the Romans totally lost their liberty. *Augustus* disagreed with his colleagues, and after he had defeated them, he made himself absolute in *Rome*. The triumvirate was in full force in *Rome* for about twelve years.

§ *Elian*, a celebrated Roman, who lived in the reign of *Adrian*. He published several treatises on animals and general history. He wrote chiefly in Greek, preferring that language to the Latin. The *Adrian* above mentioned, was the same who came to *Britain*, where he built a wall, between the towns now called *Carlisle* and *Newcastle*, sixty miles long, to protect the *Britons* from the incursions of the *Caledonians*. He killed in battle 500,000 Jews, who had rebelled, and built a city on the ruins of *Jerusalem*, which was called *Aelia* (afterwards *Jerusalem*). His memory was so retentive, that he remembered every incident of his life, and knew all the soldiers of his army by name. He died A.D. 138.

pose, that the greater part of them at least, are founded in fact.

PLINY* relates, that the LION has such respect for the female sex, and for infants, that he will on no occasion attack them; and this is repeated by the Italian traveller MASSI. A tame Lion, that had escaped from bondage, and was released, is said to have recognised his keeper, at the moment he was about to spring upon and devour him.

A Lion, about three months old, was caught in 1787, in one of the forests of Senegal, in Africa; and PELLETAN, at that time the director of the African Company in that colony, undertook to superintend the animal's education. The mildness of his look and the unusual gentleness of his disposition, rendered this Lion a great favourite with all persons who saw him. Sensible of the good treatment he received, he seemed, on all occasions, highly delighted with the caresses and attention of his friends, and was, in most respects, as tractable as any domestic animal could be. Such was his love of society, that he was always delighted to be in a room where many persons were assembled; and, what was very extraordinary, he lived in perfect harmony, and was, at all times, on the best terms with the other animals, of every species, that were kept in his master's house. He slept in the same place with sheep, dogs, cats, geese, &c.

Equally courageous with the Lion, the Lioness, when pressed by hunger, will attack every species of animal that comes in her way.

like him, generally compelled to have respite, to conceal herself from observation, by crouching on her belly in the midst of herbage or underwood, and there to wait till the prey comes within her reach. She then suddenly dashes on the victim, seizes it at the first bound, and soon destroys it.

About the year 1650, says Mr. Bingley, when the plague raged at Naples, Sir George Davis, the English Consul there, retired to Florence. One day, from curiosity, he went to visit the Grand Duke's dens. At the further end of the place, in one of the dens, lay a Lion, which the keepers, during three whole years, had not been able to tame, though all the art and gentleness had been used. Sir George no sooner appeared at the entrance of the den, than the Lion ran to him with all the indications of transport that he was capable of expressing. He raised himself up and licked his hand, which this gentleman put in through the iron grate. The keeper affrighted, pulled him away by the arm, entreating him not to hazard his life by venturing so near the fiercest creature of his kind that had ever entered those dens. Nothing, however, would satisfy Sir George; but in spite of all the keeper said to him, he would go into the den. The instant he entered, the Lion threw his paw upon his shoulders, licked his face, and ran about the place, fawning, and as full of joy as a dog would have been at the sight of his master.

In the beginning of the last century, a Lion and a Lioness were

Pliny, son of the River, was born at Vereia, in Italy. He of a noble family. He greatly distinguished himself in the field, and was also a very eminent writer: but of the works which he composed, none are extant but his *Natural History* in 37 books. This includes of the heavens, the stars, wind, rain, land, minerals, trees, flowers and plants, besides an account of all living animals, birds, fishes, and beasts, in general, not de-

known on the globe; a history of every art and science, of commerce, and navigation; with their rise, progress, and several improvements; and he is said to have visited Mount Vesuvius, during his tour, and having approached near

the mouth of the crater, he was buried by the thick sulphur smoke that surrounded him. His body was found three days after his death, and was decently interred. This memorable event happened A.D. 70. (TACITUS.)

kept in the menagerie of the landgrave of Hesse Cassel, in two cages, close to each other, separated by a single grate, and communicated by the means of a door, which could be opened whenever it was thought proper to let the two animals be together. They were both very tame towards their keeper, who had the care of them, and his wife. Once, the latter having caressed the Lion for a considerable time, the lioness observed it with evident signs of displeasure, and showed an inclination to break through the grating, in order to get at her supposed rival. Unfortunately, the door, by which the dens communicated with each other, not being properly secured gave way; upon which, the Lioness immediately flew at the woman, who, undoubtedly would have fallen a sacrifice to her jealous fury, had not the lion immediately interposed and defended her.

OF THE GENEROSITY OF THE LION.

Of late years, the truth of the accounts, which have been so long current, respecting the generous disposition of the Lion, have been called in question. Several travellers, in their accounts of Asia and Africa, describe him as of a more rapacious and sanguinary disposition than had formerly been supposed, although few of them have had the opportunity to make him a particular object of their attention. A circumstance that occurred not long since in Vienna, seems, however, to confirm the more ancient accounts. In the year 1791, at which period the custom of baiting wild beasts still existed in that city, a combat was to be exhibited between a Lion and a number of large dogs. As soon as the noble animal made his appearance, four large bull-dogs were turned loose upon him; three of which, however, as soon as they came near him, took fright and ran away. One only had courage to remain, and make the attack. The Lion, however, without rising from the ground upon which he was lying, showed him, by a single stroke with his paw, how greatly he was his superior in strength; for the dog was instantly stretched motionless on the ground. The Lion drew him towards him, and laid his fore-paws upon him in such a manner, that only a small part of his body could be seen. Every one imagined that the dog was dead, and that the Lion would soon rise and devour him. But they were mistaken. The dog began to move, and struggled to get loose, which the Lion permitted him to do. He seemed merely to have warned him not to meddle with him again. But when the dog attempted to run away, and had already got over half the enclosure, the Lion's indignation seemed to be excited. He sprang from the ground, and in two leaps reached the fugitive, who had just got as far as the paling, and was whining to have it opened for him to escape. The enraged and flying animal had called the instinctive propensity of the monarch of the forest into action; the defenceless enemy now excited his pity; for the generous Lion stepped a few paces backward, and looked quietly on, while a small door was opened to let the dog out of the inclosure.

This unequivocal trait of generosity moved every spectator. A shout of applause resounded throughout the assembly, who had enjoyed a satisfaction of a description far superior to what they had expected.

The Lion is said to be long lived, although the precise period of his existence is perhaps unknown. By BERTON, he is limited to about 25 years, but it is certain that his life is of a much longer duration. The great Lion, called Pompey, which died in the Tower A.D. 1760, was known to have been there above 70 years, and another brought from Africa, died in the same place at the age of 63.

Of the generosity of the Lion, there are many instances on record. There are but few scholars but are acquainted with the story of ANDROCLES, the Roman slave, who, being ill-treated by his master, the pro-consul of Africa, escaped into the desert, where, exhausted with hunger and fatigue, he took up his lodging in a cavern, which, contrary to his expectation, proved to be a Lion's den. He had not remained long before an enormous Lion entered. Androcles found it impossible to escape, and gave himself up for lost. The Lion approached him, but instead of devouring him, held up his foot, which was wounded and bloody, and made a growling complaint, as if he craved the man's help. Androcles, considering that nothing could add to the danger of his situation, with a courage that despair excited, and undoubtedly with a trembling hand, laid hold of the Lion's foot, and drew out a large thorn, which had been the cause of his pain. The beast finding himself much eased, caressed the man who had rendered him this service, then laid down and slept beside him. The next night, the Lion went out again, found some prey, brought it home, and laid it at the feet of his benefactor. A perfect familiarity commenced between Androcles and the Lion, and in this manner they lived three years.

At the expiration of this period, the slave knowing that the term of his master's pro-consulship in Africa was expired, and supposing that he himself was forgotten, left the den in the Lion's absence, and made his way to the Roman colony; but being unfortunately recognised for a runaway slave, he was taken and sent to Rome to his master. By the Roman law the master was invested with absolute power over his slaves, and this unfeeling barbarian ordered Androcles to be thrown to the wild beasts in the amphitheatre. No sooner was the poor slave placed in this dreadful situation, than he was approached by an enormous Lion, which, as both he himself and the spectators of this interesting scene supposed, was to bury him in its voracious stomach. At the moment, however, when the people expected to see the terrible creature open his tremendous jaws to devour his victim, he, to every one's surprise, fell down at the man's feet, and began to fawn upon him like a spaniel. Androcles then recognised him to be the identical Lion with which he had lived so familiarly in Africa, which having been unfortunate like himself, had been taken and carried to Rome for the public shows.

This happened in the reign of Caligula, and that emperor being informed of so extraordinary a circumstance, obliged the cruel master to liberate the slave. By the emperor's order the Lion was also given to Androcles, who traversed the streets of Rome attended by his old friend. The Lion would never leave him; but constantly accompanied him, and proved to the man a source of wealth, by the emoluments which it procured him for the gratification of public curiosity.

A remarkable instance of recollection and grateful attachment is related, by Mr. Hope, of a Lion belonging to her grace the Duchess of Hamilton. "One day," says our author, "I had the honour of dining with the duchess. After dinner the company attended her grace to see a Lion fed which she kept in the court. While we were admiring his fierceness, and teasing him with sticks, to make him abandon his prey and fly at us, the porter came and informed the duchess, that a sergeant, with some recruits at the gate, begged to see the Lion. They were accordingly admitted at the moment the Lion was growling over his prey. The sergeant advancing to the cage, called 'Nero, Nero, poor Nero, don't you know me?' The animal instantly turned his head to look at him; then left his prey, and came wagging his tail to the side of the cage. The man put his hand up on him and patted him,

telling us, at the same time, that it was three years since they had seen each other; that the care of the Lion, on his passage from Gibraltar, had been committed to him, and he was happy to see the poor beast show so much gratitude for his attention."

The LIONESS.—She is less than the Lion and not so fierce, except in defence of her young, or in procuring them food, in which case, she is not inferior to the Lion in ferocity, nor less to be dreaded.

OF THE ANTELOPE, OR GAZELLE KIND.

ANTELOPES are considered by some as a species of the goat kind. The distinguishing characters are these; their horns are annulated,* at the same time there are depressions running from their bases to the apex.† They resemble the goat in never shedding their horns; but on the other hand, they have a conformity to the roebuck in the elegance of their form, and the graceful agility of their motions. Most of these animals are natives of the torrid zone, and are found in great numbers in all the northern parts of Africa and in India. Of all animals, the Gazelle kind have the most beautiful and brilliant eyes. Besides the extraordinary beauty and mildness of its aspect, the Antelope surpasses the roebuck in the delicate formation of its limbs, as well as in the fineness and glossiness of its hair. It is elegant in its shape, and very rapid in its motions; of a restless and timid disposition; vigilant and vivacious; and its boundings are astonishingly light and elastic. These may be considered as their general characteristics, although they immerse into a great number of varieties.

The COMMON ANTELOPE is a native of Barbary, and is somewhat inferior in size, but resembles it in all the proportions of its body. Its horns are upright, spirally twisted, and encircled almost to the top, with prominent rings. The colour of the body is brown, mixed with red and dusky; the belly is white. The female is destitute of horns.

The WHITE ANTELOPE is an inhabitant of Africa, and in the neighbourhood of the Cape of Good Hope they are frequently seen in herds of several thousands. This animal is a most beautiful creature, about two feet and a half high, and three feet in length. The predominant colour of this animal is a *light brown*; and its breast and belly are *white*. They are so extremely swift, that they require the fleetest horse to overtake them.

THE ROYAL ANTELOPE, OR LITTLE GUINEA DEER.—Of all quadrupeds, the Royal Antelope is perhaps the smallest and the most beautiful. Its legs are not much longer than a goose-quill; the height nine inches, and length fourteen. Her shape is delicate beyond description, and it appears like a stag in miniature. It is no larger than a half-grown cat.

The royal Antelope is a native of Senegal, and other hot parts of Africa. They are also found in India, as well as in Ceylon, and many other of the Oriental Islands; but they can subsist only in a hot climate, and are too delicate to be kept alive in Europe. Its agility is extreme; for, notwithstanding its diminutive size, it will bound over a wall twelve feet high. When domesticated, it becomes entertaining and familiar; but, as before observed, is very delicate.

* Annulated, marked with rings.

† Apex, the top point, or summit of any thing.

THE MOON.



TELESCOPE VIEW OF

Of all the celestial bodies, the MOON, next to the Sun, has the most beneficial influence on this our globe. And although one of the smallest of the heavenly *mts.*, she is, from her proximity to the EARTH, apparently, the largest and most brilliant, with the exception of the Sun. Her beautiful appearance in the skies, with her regular variations, cannot fail to attract the notice of the most inattentive and unobservant spectator; and the advantages which she bestows on man, might, one should think, excite general sentiments of gratitude to that BEING, by whose command

The Moon, as daylight fades,
Lifts her broad circle in the deep'ning shades;
Arrayed in glory, and enthroned in light,
And breaks the solemn terrors of the night:
Sweetly inconstant in her varying flame,
She changes still, another, yet the same!

With the assistance of a powerful telescope, more accurate observations can be made on the surface of this luminary than on any other, so as to prove, almost to a certainty, that it is a habitable globe.

The Moon is the satellite of the Earth, and while she revolves round her primary, revolves also with her round her common centre, the Sun; and from her thus accompanying the Earth in her course round the Sun, she receives the name of a secondary planet, or satellite.

The diameter of the Moon is only 2170 miles, and her distance from the Earth is 240,000 miles, round which she revolves in 29½ days. Her period of revolution round the Sun, is, of course, the same with that of the Earth.

That the Moon is an opaque body, shining only with reflected light, is evident from the different appearances she assumes; if she shone by her own native light, she would always appear full; but as she shines only by reflecting the light of the Sun, her luminous part puts on different shapes according to her situation as it respects the Earth.

Thus, when the Moon is in conjunction, or in a direct line between the Earth and Sun, her dark side is towards the Earth, and she is consequently invisible to that planet; but when she has removed a little beyond that line, a small streak of light begins to appear in the form of a thin crescent; this increases as she proceeds in her orbit, until having passed over one quarter of it, she appears as a half-moon, continuing to increase in size as she proceeds, she is now called gibbous,* until having completed half her orbit, when she appears quite round, she is then called a full Moon.

Proceeding onward in her course, she again becomes gibbous,

* Gibbous, swelling, or convex;

convex.

receded or third quarter she appears a second time, as a *half Moon*, and continually decreases in size until again invisible. During nearly one half of her course, she is above the horizon by day-light, which renders some part of these phases invisible.

The time that elapses between one new Moon and another is greater than the Moon's revolution in her orbit; the former, which is called a *lunation*, being twenty nine days and a half; the latter, denominated a *periodic month*, only twenty-seven days and a half.

The reason of this is obvious; for, as the *EARTH*, during the Moon's revolution must have passed through nearly one-twelfth part of her orbit, the Moon must traverse more than the circumference of hers, before she can again be in conjunction so as to become a *New Moon*.

If the earth had no annual motion, the Moon's motion round the earth, and her track in open space, would be always the same. But as the earth and moon move round the sun, the moon's real path in the heavens is very different from her visible path round the earth; the latter being in a progressive circle, and the former in a curve of different degrees of concavity; which would always be the same in the same part of the heavens, if the moon performed a complete number of lunations in a year without any fraction.

To illustrate this, let the nail in the end of the axle of a chariot wheel represent the *EARTH*, and a *pin* in the *nave* the *Moon*; if the body of the chariot be propped up so as to keep that wheel from touching the ground, and the wheel be then turned round by hand, the pin will describe a circle, both round the nail, and in the space it moves through. But if the props be taken away, the forces put to, and the chariot driven over a piece of ground which is circularly convex, the nail in the axle will describe a circular curve, and the pin in the nave will still describe a circle round the progressive nail in the axle, but not in the space through which it moves. In this case, the curve described by the nail will resemble in miniature as much of the Earth's annual path round the Sun, as it describes whilst the Moon goes as often round the Earth as the pin does round the nail; and the curve described by the pin will have some resemblance to the Moon's path during so many lunations.

The Moon's orbit is inclined to that of the *EARTH* about 5° , and the two points where they cross each other, are called her nodes. If the Moon is in one of these at the time of her conjunction, she directly interposes between the *EARTH* and *SUN*, and occasions a total eclipse of the latter. If she be full in one of her nodes, she passes through the *EARTH*'s shadow, and is herself to tally eclipsed.

The Moon revolves on her axis in $2\frac{1}{2}$ days, which being exactly the time from one *new Moon* to another, occasions her to present always the same part of her surface to the *EARTH*. In consequence of this, the *EARTH* is now seen from one half of the Moon, while to the other half it is visible in exactly the reverse order of the appearances of the Moon to the *EARTH*.

Thus, when it is new Moon, the *EARTH* appears to that satellite: resplendent orb, by far the largest of the celestial bodies, being thirteen times and a half as large in appearance, and forty-nine times in reality as the Moon. The countries on the surface of the *EARTH* must appear distinct and well defined; and as she revolves on her axis nearly thirty times as swift as the Moon, the appearance and disappearance of the *EARTH* must afford an accurate measure of time. But, as the Moon proceeds in her orbit, the enlightened disk of the *EARTH* turns away from her, and decreases until she becomes full, when the dark side of the *EARTH* is turned towards her, and is of course invisible. Thus, the appearance of

the *EARTH* to the Moon is exactly the reverse of that of the Moon to the *EARTH*.

The motion of the Moon in her orbit is irregular, in consequence of the *attraction of gravitation*; for, not only is she acted upon by the *EARTH* and *SUN*, but also by the other stupendous bodies, which make up the *Solar System*; and as this attraction varies in proportion as they approach to, or recede from her, the accurate calculation of her motions is a matter of great difficulty.

The Moon, when viewed through a telescope, presents an appearance which indicates that its surface is made up of hills, valleys, and caverns, and perhaps of seas, lakes, and rivers, although their actual existence has not yet been ascertained.

The existence of mountains and hills in the Moon may be inferred with considerable certainty, from those parts which are supposed to be elevations casting a shadow opposite to the *SUN*, as well as from the jagged appearance of the edge of the Moon, when she is horned or gibbous,* the valleys and cavernous parts are distinguished by the shadows appearing next to the Sun.

Various conjectures have been formed respecting the height of the lunar mountains (some of which are said to be *volcanoes*), and the depth of the valleys; but they seem founded on certain data. It has been likewise a matter of dispute, whether or not the Moon is furnished with an atmosphere. Reason and analogy decide in the affirmative, and as its density,† from the specific density of the planet cannot be more than one-third that of the atmosphere of the *EARTH*, its not being perceptible is no argument against its existence.‡

The axis of the Moon is so nearly perpendicular to the plane of the *Ecliptic*, that the *SUN* never removes sensibly from her equator; consequently, her days and nights must be equal, each more than fourteen times as long as ours; and there can be no variety of the seasons.

The light emitted by the Moon produces no heat; for if her rays, concentrated by a powerful mirror, be thrown on the bulb of a thermometer, no effect is perceptible. Indeed, experiments have shown, that the light of the full Moon is 300,000 times less than that of the *SUN*.

When the Moon is *full* in the highest or lowest part of her orbit,

* But when the Moon is full, her surface has a different appearance, and instead of being seen *unseen*, it appears *even*; and is explained as follows:

That what we call the *edge* of the Moon's Disk, is not a single line set round with mountains, in which case it would appear irregularly indented, but a large zone, having many mountains lying behind one another from the observer's eye, we hence find, that the mountains in some rows will be opposite to the valles in others; and thus fill up the inequalities so as to make her appear quite round; just as when we look at an orange, although its roughness be very discernible on the side next the eye, especially if the *SUN* or a candle shines obliquely on that side, yet the line terminating the visible part still appears smooth and even.

† Lightness, softness, &c.

‡ Specific, in Philosophy, is that which is peculiar to any thing, and distinguishes it from all others. *Specific density*, or *specific gravity*, is that by which one body is heavier than another of the same dimensions, and is always as the quantity of matter under that dimension. (In Medicine, it is a remedy whose virtue and effect is peculiarly adapted to some certain disease, is adequate thereto, exerts its whole force immediately theron.)

§ It is quite evident, however, that the Moon has no atmosphere of any sensible density, as we have, not only because her edge, when viewed through a telescope in a clear night appears always well defined; but because the *Stars*, which from time to time disappear behind her, retain their full lustre till they touch her *very edge*, and instantly emerge again with equal brightness; whereas, if she had an atmosphere at all dense, there would be a kind of mist or haziness around her, which would make the stars look fainter when they are seen through it than at other times.

she does not appear perfectly round; in the former case, a small deficiency appears in the lower edge, and the contrary in the latter, in consequence of our not having a full view of the enlightened side.

From the earliest ages, an opinion has been entertained, and experience seems to prove it well founded, that the Moon has an influence on the weather, on the human constitution, and on the tides. Persons deranged in their intellects, are denominated *lunatics*, because they experience an increase of their disorder at the full and change of the Moon; it is hence their disorder is called lunacy; so called from the Moon's Latin name, *Luna*.*

During the autumn, the operations of harvest are greatly facilitated by the early rising of several nights successively of the Moon, both before and after she is full, this is occasioned by her becoming full in *Pisces* and *Aries*, which signs rise in a shorter time than the others, and at this season early in the evening. In the spring, when the Moon is in these signs, she rises with the Sun, and in the summer, at midnight.

The irregularities already alluded to, cause some parts on her eastern and western edge to be only occasionally seen; these changes are called her *libration of longitude*. There are parts about her poles also, only occasionally visible; this is called the *libration of latitude*.

Such are the principal phenomena that distinguish this beautiful luminary; and if we advert to the benefits of which she is productive to our globe, we can scarcely be wanting in emotions of gratitude to the Creator, who, in thus, as in all his works, has displayed infinite wisdom and inexhaustible goodness.

OF THE HARVEST MOON.

It is remarkable, that the Moon during the week in which she is full about the time of harvest, rises sooner after sun-setting than she does in any other full-moon week in the year. By this means, she affords an immediate supply of light after sunset, which is very beneficial for those employed in the harvest, and gathering in the fruits of the Earth. Hence this *full Moon* is distinguished by calling it the "HARVEST MOON."

The reason of this phenomenon is, that the Moon is *full* at this season in the signs of *Pisces* and *Aries*, which are directly opposite the Sun's place in *Virgo* and *Libra*; and because these parts of the ecliptic rise in a shorter space of time than others, the Moon rises more immediately after sunset, than when she is full at any other season of the year.

In our WINTER, the Moon is in *Pisces* and *Aries*, about the time of her first quarter, when she arises about noon, and therefore, her rising is not then noticed.

In SPRING, the Moon is in *Pisces* and *Aries* about the time of her change, but as she then gives no light, and rises with the Sun, her rising cannot be perceived.

In SUMMER, the Moon is in *Pisces* and *Aries* at the time of the last quarter; and then as she does not rise till midnight, her rising usually passes unnoticed.

But in AUTUMN, the Moon is in *Pisces* and *Aries* at the time of her full, and rises soon after sunset, for several nights successively; which makes her regular risings very conspicuous at that time of the year.

* The celebrated Dr. Mend firmly believed this doctrine, and published a work on the solar and lunar influence, entitled "De Imperio Solis et Lunae in Corpore Humano;" and while there are many opponents of this doctrine, the majority of the learned are in its favour.

All this would happen regularly, if the Moon's orbit lay in the *Ecliptic*; but her orbit makes with the Ecliptic an angle of $18^{\circ}18'$, and crosses it at two points, called her *nodes*; so, thus, her rising, when in *Pisces* and *Aries*, will sometimes not differ above an hour and forty minutes, through a whole week; and at other times, in the same two signs, she will differ in a week three hours and a half, in the time of her rising, according to the different positions of the nodes, with respect to the signs; which positions are always changing, because the nodes go backward through the *Ecliptic*, in 18 years 225 days.

This revolution of the nodes causes the Harvest Moon to go through a whole course of the most advantageous, and least beneficial states, with respect to the Harvest, every 19 years. They were least beneficial from 1789 to 1797; from that period most beneficial till 1807; from 1807 they again became least beneficial, and continued so till 1815.

Their most advantageous period began again in 1816, and continued till 1825, when the opposite period commenced, and lasts to 1834; and again they are most beneficial from 1835, to 1843, and so on.

In the southern latitudes the Harvest Moon will rise in *Virgo*, and *Libra*, when it is spring with us. But about the equator, where the seasons are not so variable, and the weather changes seldom, and at stated times, the Moon constantly rises about fifty minutes later every night, than on the preceding; her light not being so necessary there for gathering in the fruits of the earth, as in the northern and southern climates of any considerable latitude.

At the polar circles, where the mild season is very short, the autumnal full Moon rises at sunset, from the *first* to the *third* quarter; and at the poles, where the Sun is absent for one half of the year, all the winter full Moons constantly shine without setting. These circumstances are very striking proofs of the great wisdom and beneficence of the Deity! We may, therefore, reasonably say with the pious Dr. Young, in his "Night Thoughts,"

"An undevout astronomer is mad."

The phenomena of the "HARVEST MOON" may be easily and readily illustrated upon a circular artificial globe, in the following manner:

As the Moon moves through the *Ecliptic* about thirteen and one-sixth degrees, at a mean rate, every day, put a small patch upon the *Ecliptic*, about the twentieth or twenty-first degree of *Aquarius*, and then counting towards *Aries*, put another patch upon the *Ecliptic*, thirteen and one-sixth degrees from the *first*, a third at the same distance from the *second*, and so on till you come to the *seventh* patch, which will be placed on the ninth or tenth degree of *Taurus*. Then rectifying the globe for the given latitude (say London), and bringing the first patch, or twentieth degree of *Aquarius* to the eastern edge of the horizon, and setting the hour index to twelve, as being the most convenient hour to be remembered) turn the globe gently towards the west, and you will find, that the seven patches, which include as much of the *Ecliptic* as the Moon, goes through in a week, will all rise successively in the time that the index goes over two hours. This shows, that at the season we are speaking of, the Moon will not differ above two hours in her rising for a whole week. If you try the same experiment upon the signs *Virgo* and *Libra*, beginning to place your patches at the twentieth degree of *Leo*, you will find, that when the Moon is in those signs, she will differ in her rising for a week about four times as much as she did before; and in both cases, if you turn the globe till the patches come to the western edge of the horizon, one after the other, you may observe, that when the moon differs least in the times of her rising, she will differ most in the times of her setting, and vice versa.

THE CEDAR OF LEBANON.

MADAME DE GENLIS was not too warm an admirer of this truly magnificent tree, when she said "It is neither *Travellers* nor *Naturalists* who would have named the *Oak* the king of trees. The *Rosy* will be in all countries the *Queen of Flowers*; but among trees the regal honour belongs only to the ancient and majestic CEDAR."

Anciently it was indeed, held in the first estimation among trees. The great and wise SOLOMON speaks of it in his writings in the most rapturous terms of commendation, and in the building of his famous and gorgeous TEMPLE he made so great use of this wood, that he almost strip Mount Lebanon of its towering and wide-spreading CEDARS. Of the extent which SOLOMON



made use of this wood in the building of the Temple we may form some idea from the facts that that vast structure was almost entirely lined with it; and that to supply the necessary quantity of this precious wood no fewer than eighty thousand MEN were employed solely in felling CEDARS and transferring them to JERUSALEM. A CEDAR, when seen in the prime of its living beauty, has a grandeur of appearance which would alone be sufficient to account for the partiality which SOLOMON shewed both to the living tree, as a natural object, and to its timber as a material of building. But beyond this, there was yet another reason for his high estimation of his favourite tree. The wood of this tree emits a fragrance which protects it against ravages which various kinds of insects commit upon nearly all other descriptions of wood. And the ancients had a most exaggerated notion of its durability and incorruptibility; qualities which, however, it really possesses to an extent that forms a better apology for this exaggeration than some of their other fabulous relations can lay claim to. It

was, probably, from a supposition, that the CEDAR, incorruptible itself, could communicate its incorruptibility to objects placed in contact with it, that the sap of the CEDAR was used by the ancients in embalming the bodies of the dead, and was also rubbed on the most precious of their manuscripts to preserve them. From the writings of SOLOMON, it is very evident, that if the CEDAR was not originally native only of LEBANON, it was at least much more abundant and more beautiful than in any other country in the world. It is never of the Cedar merely that Solomon speaks, when celebrating beauty or grandeur, but of the *Cedar of Lebanon*. In our own age, such are the revolutions which take place in all earthly things, it might far more justly be spoken of as the CEDAR of England or France. For it is completely naturalized in both of those countries, and each of them possesses many magnificent specimens of it, while in Lebanon, the ancient land of its glory, and its abundance, it has almost ceased to exist!

More than two centuries ago, a traveller who ascended Mount Libanus could only count two dozen of living and flourishing trees, and two or three old ones fast sinking into decay. And towards the close of the seventeenth century a traveller named MAUNDRELL, visited LIBANUS, and reported that only sixteen CEDARS were then standing. And this on the very site where, in the days of SOLOMON, there was an immense forest of these beautiful trees! On the very spot where it might be, without poetical exaggeration, said,

See lofty Libanus his head advance,
See nodding forests on the Mountains dance.

Pope.

When the Cedar was first planted in England is a fact which is now impossible to ascertain. One very eminent writer states, that the first Cedars ever planted in England were two, which were planted in the "Medico Botanical Garden" at Chelsea, as lately as the year 1683. But this statement cannot be correct, if it be true, that the superb tree which stood at HENDON PLACE in Middlesex, and was blown down in the tempest of New Year's day, 1779, was actually planted there in the presence of Queen Elizabeth. Supposing this to be true, it is quite obvious, that the Cedar was planted in England much earlier than the writer in question would make us believe. And the dimensions of the tree at Hendon were such as might be expected to belong to a tree planted as long ago as the reign of the "Virgin Queen." For at seven feet from the earth the trunk of this tree was upwards of sixteen feet in girth, the spread of its branches in their greatest width was above one hundred feet, and the height of the tree was above seventy feet.

The appearance of the CEDAR derives its grandeur from its peculiar way of growth as well as from its great height and bulk. Its branches extend widely, and incline towards the Earth; and when agitated by the wind, its rows of branches one above the other look like verdant banks put into gentle graceful motion. The CEDAR represented in our cut is literally a "*portrait from life*"; our draughtsman having drawn it from its very stately and beautiful original in the Royal Gardens at Kew.

Friend is of a large signification. By friendship we mean the greatest love and the greatest usefulness; and the most open communication, and the noblest sufferings; and the most exemplary faithfulness and the severest truth.

THE GUIDE TO KNOWLEDGE.

EDITED BY MR. W. PINNOCK,

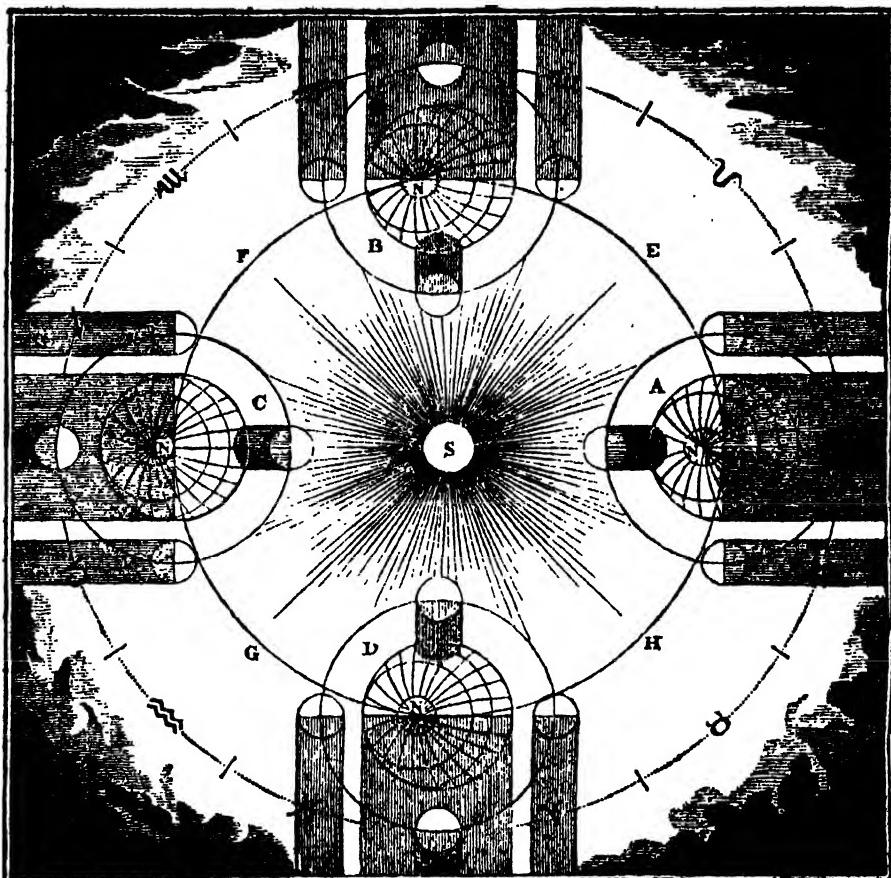
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PRICE
ONE PENNY.

OF THE EARTH.



VIEW OF THE EARTH IN HER ORBIT ROUND THE SUN, SHOWING THE SEVERAL RELATIVE POSITIONS BY WHICH THE SEASONS ARE PRODUCED.—THE MOON IS ALSO REPRESENTED IN HER ORBIT ROUND THE EARTH.

OF THE EARTH.

More distant still our Earth comes rolling on,
And forms a wider circle round the Sun;
With her the Moon, companion ever dear!
Her course attending through the shining year.

BAKER.

THE next planet to Venus in the order of the System is the EARTH on which we live; which may be considered of secondary importance, being much inferior in magnitude to Jupiter, Saturn and Uranus, but superior to Mercury, Venus, Mars, and the four new planets. But small as the Earth is when compared to some of the other planets, it is to us of the highest importance: we wish only to attain knowledge of others, that we may find out their relation to this, and thence learn our connexion with the

universe at large. In our preceding numbers we have spoken of the Earth in general, but here we wish to come to particulars; with the view of leading youth, by gentle and easy steps, from the first principles of the science, to those parts which are the most interesting and useful. And as the Earth we inhabit is constantly subject to our observation, and is that with which we are best acquainted, a more full description of it than we have hitherto given, will naturally excite curiosity and attention, and thereby lead on to a complete development of the origin, rise, progress, and history of literature, science, and the arts. In the earliest ages of the world, mankind knew nothing as to its form and shape; and even in the present enlightened age, it is not unusual to meet with persons whose ideas in this respect are far from the truth. Those who have not been in the habit of considering this subject in an

astronomical point of view, have still a very confused notion of the shape of the Earth, and also as to its position in the heavens. But as this part of the subject is already developed in pages 25 and 26, it need not be further noticed here.

The Earth, like the other planets, is not a *perfect* sphere, its equatorial* diameter exceeding in length its axis by more than thirty miles; the former being 7964 miles, and the latter about 7930, her distance from the Sun is 95,173,000 miles; and she traverses the whole of her orbit in 365 days, 6 hours, 9 $\frac{1}{4}$ minutes, which constitutes her year.

The *axis* of the Earth is not perpendicular to the plane of the *Ecliptic*,† but inclined to it at an angle of $23^{\circ} 28'$; round this axis she revolves in 23 ho., 56 min., 4 sec., which is the length of the astronomical day.

The inclination of the Earth's axis is the principal cause of the variety or change of seasons; for as the axis of the Earth always preserves its parallelism, in her revolution round the sun, at one part of her orbit she receives most of the light and heat, on her northern hemisphere, and at another part, on her southern, according as her north or south pole is turned towards the sun; while in two points of her orbit, both hemispheres are equally enlightened. The above diagram will best explain the course of change of seasons, and of the lengths of the days and nights.

Let A, B, C, D, represent the Earth in four different parts of her orbit, equidistant from one another;—N for *axis* and the *north pole*, and S the *sun*, nearly in the centre of the Earth's orbit. As the Earth goes round the sun according to the order of the letters A, B, C, D, her axis N keeps the same obliquity, and is exactly parallel in every part of her orbit.

When the Earth is at A, its north pole inclines towards the *sun*, and brings all the northern places more into the light than at any other time of the year. But when the Earth is at C, in the opposite time of the year, the north pole declines from the sun, which occasions the northern places to be more in the dark than in the light, and the reverse at the southern places.

When the Earth is either at B or D, she inclines not either *to* or *from* the sun, but lies sideways to him, and then the poles are in the boundary of light and darkness; and the sun being directly over the equator makes equal day and night at all places.

When the Earth is at E, it is half way between the *summer solstice*‡ and *autumnal equinox*; and when it is at F, it is half way between the *autumnal equinox* and the *winter solstice*; at G, half way from the *winter solstice* to the *spring equinox*; and at H, half way from the *spring equinox* to the *summer solstice*.

From this, it is evident, that when the Earth is at A, the *north-pole* is enlightened, and the *southern* in darkness, and that exactly the reverse is the case when the Earth arrives at C, for then the *south-pole* is enlightened, and the *north* in darkness; in the former

* Equatorial, belonging to the equator, an imaginary line, which divides the world into two equal parts, called the Northern and Southern Hemispheres. See page 1. When the sun comes to this circle, the days and nights are equal all round the globe.

† The *Ecliptic* is a great circle of the sphere, in which the Sun always appears to move; so called because *Eclipses* generally happen when the Moon is in or near this circle. It is divided into twelve equal parts, which are called *signs*; each of which takes its name from that constellation, which at the time the names were given, was situated near the portion of the *Ecliptic* it denominates.

‡ Is that time when the sun is at the greatest distance from the equator, and is thus called, because he then appears to stand still, and not to change his distance from the equator for some time, which appearance is owing to the obliquity of our sphere, and which those living under the equator are strangers to. Solstice is from the Latin words *sol*, sun, and *stare*, to stand.

case, the *northern hemisphere* has *summer*, and the *longest day*, while the *south* has *winter*, and the *shortest day*; in the latter every thing is completely reversed.

That the Earth is of a globular form may be inferred from analogy; as all the other heavenly bodies which are visible to us are globes, there is little reason to doubt that the earth is so likewise. Of this, however, there are demonstrative proofs, for which the reader is referred to page 26.

The motion of the Earth in her orbit round the sun is called her *annual motion*, and that round her axis, her *diurnal motion*, which, at the *equator*, is about 1042 an hour.

These two motions, although constantly carried on together, are not sensible to us, because they are so equable, interrupted by no impediments, and because every thing on the Earth's surface, and the atmosphere itself partakes of these motions. Why bodies do not fall from the surface of the Earth is explained at page 26.

The Earth is surrounded by a compound fluid substance, called the *atmosphere*, which consists of air mingled with *aqueous vapours*,* and other exhalations from her surface. This atmosphere has a *refractive*† power, by which the rays of the Sun are bent out of a straight line, and occasion a degree of light after that luminary is below the horizon; this faint light is denominated *twilight*.

It has already been observed, that the *Orbit* of the Earth is not a perfect circle, but inclined to the *Ecliptic*, and that the *Sun* is not exactly in its centre. This occasions the Earth to be seven days longer in passing through one half of her orbit than she is in traversing the other. The *Orbit* of the Earth is placed between those of *Venus* and *Mars*.

OF LANGUAGE IN GENERAL.

Of all the gifts bestowed by the Almighty Creator on man, *LANGUAGE* is the most important. Not merely by the power of uttering articulate sounds, this he possesses in common with the *parrot*, the *jay*, and the *maggie*, but the inestimable advantage of conceiving ideas in the mind, and expressing them by the lips, by means of a vehicle understood by the others of the species. Without *LANGUAGE*, reason could not exist. We must be well aware that, when we think, *ideas* are suggested to the mind, clothed the language by which we have been accustomed to express our thoughts. Without it, then, we should be unable to think; we should, in point of intellect, be on a level with, or perhaps beneath, the brute creation.

In the early stages of *society*, when men lived almost in a state of nature, their ideas must necessarily have been few, and their *LANGUAGE* was accordingly simple and poor; at that period they communicated their thoughts, not by terms expressing abstract ideas and nice shades of meaning, but by circumlocution, and by highly figurative language.

Many have been the theories formed by philosophers to account for the rise and progress of *LANGUAGE*, from the first attempt at a communication of ideas, to the acquisition of the power of pouring forth, in a copious stream of words, admirably adapted to express them, the conceptions of a vigorous and well-informed mind; but

* *Aqueous vapours*, watery particles. (Aqueous, watery;—vapour, a particle.—Vapour, a steam, a fume;—a vain imagination).

† *Refractive*—having the power of *refraction*. Refraction is the deviation of a moving body from its direct course, occasioned by the different density of the medium it moves in; ex, it is a change of direction occasioned by a body's falling obliquely out of one medium into another of a different density.

the believer in divine revelation must reject such theories, however plausible, and consider that the power of clothing *ideas* in a vehicle denominated *words*, and of mutually understanding them when communicated, was imparted to the newly created pair in *Paradise*, by their Creator. It is probable that this was done no farther than was absolutely necessary for the limited purposes of our first parents, leaving them to add to the number of their words as circumstances should arise to induce them thus to do. This is quite in accordance with the general system of Providence, for, although at the creation, *man, beasts, birds, fishes*, and every living thing were produced perfect in all their parts, yet, so delightful is the gradual acquisition of *KNOWLEDGE*, and the accumulation of *new IDEAS*, that it seems highly probable that the mental powers of the first human beings were allowed gradually to unfold themselves; and that they continually acquired fresh ideas, and invented terms by which to express them, as, in succeeding generations animals and vegetables invariably grew from small beginnings to their full maturity, by slow degrees.

Such an arrangement was essential to the happiness of *PARADISE*; for a mind furnished with every species of *KNOWLEDGE* that it could possibly comprehend, and of every facility of expressing its ideas, would be liable to fall into that uneasy state called by the French *ennui*, a state utterly incompatible with the happiness supposed to be enjoyed in the days of innocence.

The same observations will equally apply to the *Confusion of Tongues at Babel*; for, although it is said that, after this event "they could not understand one another's speech," it appears evident, that each had a language different from that he used before. Now, it cannot be supposed, that every individual spoke a peculiar language, but that it was some considerable time before those that spoke the same could find each other out, and form themselves into distinct tribes, or communities; this was, however, in process of time, done, and thus appear to have originated the different nations scattered abroad on the surface of the *Earth*. The tongues miraculously imparted, were, no doubt, rarely sufficient as it respects copiousness to express the most urgent wants of the speakers, and they were left to enlarge their vocabulary, and to enrich their language, as they advanced in civilization and knowledge, and to give it that regularity and precision which has been denominated *Grammatical Construction*.

By means of commercial and other intercourse, the language of one nation becomes enriched by terms and ideas borrowed from others. This will account for the number of words either precisely alike, or very greatly resembling each other, and expressing the same ideas, both in *ancient and modern languages*. Numerous instances of this might be adduced, did not the notoriety of the fact render it unnecessary. This strengthens the supposition that the languages bestowed on *MAN* at the *Confusion of Tongues*, were particularly meagre and scanty, that man might exercise his ingenuity in improving them, as he increased in knowledge and wisdom. It is by no means improbable, that the change which took place in the language of mankind at Babel was not completely radical, but merely so great as to render the conversation of one tribe unintelligible to another. This corruption of language is not uncommon even in the present day: the *Patois* of the French provinces is unintelligible in *PARIS*, and yet it contains multitudes of words in common with pure French; the dialect of a Yorkshire peasant is equally unintelligible to an inhabitant of London, yet it is invariably English. Thus may it have been at the *Confusion of Tongues*; different dialects of the same language may have been spoken, little resembling each other, yet containing sufficient similarities to evince their common origin.

By this theory actual appearances seem reconciled with the account of the separation of mankind into tribes and nations, speaking *different LANGUAGES*, yet having many words in common, of similar import, which may be traced back to the earliest ages. Many others may be accounted for by the mutual intercourse already alluded to.

It is a characteristic of the human race to be in a constant state of improvement or deterioration. Man goes on from invention to invention, until he has reached a high state of luxury and refinement, when it usually happens that he becomes indolent and effeminate, and retrogrades towards his pristine barbarism, though he may not completely reach it. Every new invention gives rise to new terms to describe it, and thus language is enriched. In due time terms expressive of abstract ideas, and not merely denoting the perceptions of sense, are employed to represent by words the flights of fancy, the deductions of reason, and the results of observation and experience.

But the improvements of language would have been very slow, and very inefficient, had not a method been invented of representing *words* to the *eye*, by characters traced on some paper substance; by which any thing spoken might be recalled to the memory at any distance of time, or transmitted to those who were not present at its utterance.

We can form little idea of the difficulties attendant on the first application of symbols, or signs, to the expression of ideas, from the ease with which we, of modern times, read the thoughts of others that have been committed to paper, by means of characters invented for that purpose. We smile at the imperfect method in use among the *Egyptians*, and very many ages since, with the *Mericans*, and other nations of America: yet it must have engaged the long and painful attention of their sages and philosophers, so to have adapted their figures to the ideas they were intended to express, as to render the connexion at all obvious to the mind of others.

But the invention of alphabetical characters seems to have carried this art to its utmost pitch of improvement; by this admirable discovery, every idea that the human mind conceives can be permanently embodied, and remain on record for ever. The most endearing correspondence can be carried on between those whose oceans divide; and philosophers of different countries can reciprocally communicate their most profound conceptions, the most interesting results of their studies and meditations; though they may never see each other's face. By the various combinations of letters, all words can be expressed with precision and facility, so that, let the subjects to be recorded be what they may, whether the history of nations, the conquest of empires, the transactions of commerce, the occurrences in private and domestic life, the emotions of love and friendship; the demonstrations, the arguments and amplifications of science and learning; or the exhortations and demonstrations of religion, there is no difficulty in combining the characters so as to form a perfect representation of them.

It has been usual to ascribe the invention of alphabetical characters to *CADMUS of Thebes*, in Greece. But there is reason to believe that they were in general use in *Egypt*, before the time of Moses, who was cotemporary with Cadmus. The son of Agenor was, therefore, most likely the inventor of part of the Greek alphabet only, and the name of the real benefactor to mankind, in this respect, is lost in the lapse of ages. It is possible that a much more perfect *ALPHABET*, for the expression of all kinds of sounds, than any at present known, might be invented; but, as those already in use answer the purpose admirably well, it would, perhaps, be exceedingly difficult to prevail on mankind to adopt any fancied improvements.

Not only have we reason to believe that all the languages of the earth are derived from one source, but that the alphabets of those languages have a common origin. The former have been enlarged and enriched by a wider and more accurate survey of Nature, a more diligent cultivation of Art, and by the gradually opening new channels of Knowledge; and the latter have sustained alterations and additions to suit the purposes of the people who adopted them. To the Hebrew is generally assigned the honour of being the primitive LANGUAGE.

LIVING LANGUAGES, or those spoken by the different nations o. the Earth, are constantly undergoing changes, by some words becoming obsolete, and by the adoption and invention of others.

Thus authors, once capable of affording great instruction or amusement to their contemporaries, become in the lapse of a few ages almost unintelligible; and, at best, unpleasant to the general reader, amogg their own countrymen. With dead languages, or those that have ceased to be spoken, the case is different, and therefore, many of those who write for immortality, compose their works in a language of this kind. European authors have generally adopted the Latin of the Augustan* Age, as it was then in its greatest purity. In the present day, however, few use any other than their vernacular† tongue.

It has long been considered as indispensable to a liberal Education, to be well versed in the languages of Greece and Rome. Not only does their acquisition of these tongues open up to the student the treasures of the greatest Historians, Poets, and Philosophers, that have ever appeared on EARTH, but it serves as an introduction to a knowledge of many of the present languages of Europe; for so largely have modern Europeans borrowed from those ancient languages, that he who is well acquainted with the latter, finds little difficulty in acquiring any of the former. The nearest approach to the Latin is the Italian; but in the English, French, Spanish, &c. are innumerable words of undoubted Greek and Roman origin.

One important innovation on those ancient models made by some of the nations of modern Europe, is the substitution of prepositions for the terminations denoting cases, and of auxiliary verbs for those of the different tenses. Much has been gained by this, as it respects precision and perspicuity, but much likewise has been lost in strength of expression, harmony of periods, and elegance of disposition. By means of the terminations, a Greek or Roman author was at liberty to arrange his words in the manner which best pleased him, while a modern European must, for the most part, assign them the places in the sentence which their construction absolutely requires; thus, a Roman author might, with equal propriety write, "Johannes amat Marcus, or Johanna Marcus amat," according as either arrangement might best suit his purpose, or seem most agreeable to the ear; the meaning in each is exactly the same. But, John loves Mark, Mark loves John, John Mark loves, would each convey a different meaning to the reader, because, for want of the terminations indicative of the accusative case, it is essential that the nominative should precede, and the accusative follow the verb.

Another alteration peculiar to the moderns, and which has nearly the same effect in poetry as the substitution of prepositions and auxiliaries for terminations, is the introduction of rhyme. The necessity which frequently arises of expanding the sense, for the purpose of closing the couplets with corresponding sounds, has compelled some of our best poets to weaken the expression and

obscure the meaning under a cloud of words. This is particularly the case in translations, as may be proved by numerous instances, that can be collected from Dryden, Pope, &c. &c.

OF MARS.



TELESCOPIC APPEARANCE OF MARS.

The next planet in the system is Mars. This is the first of the superior planets, his orbit being immediately above that of the Earth, revolving round the Sun at the nearer distance of 145,000,000 of miles. He is chiefly remarkable for his dull, red light, which is supposed to have acquired for him the name of the sanguinary god of battles. The ancients represented him riding on a high chariot, drawn by two furious horses, Fear and Terror, driven by his sister Bellona, the goddess of war; he was covered with armour, and held a spear in one hand, and brandished a sword in the other, threatening ruin and desolation to the WORLD.

Mars is much smaller than the Earth, being only 4229 miles in diameter at his equator. He revolves round the Sun in 686 days 23 hours, and on his axis in 24 hours 40 minutes. His orbit lies between that of the Earth and Jupiter, but very distant from both. From the dulness of his appearance, many have conjectured, that he is encompassed with a thick, cloudy atmosphere; his light is not near so bright as that of Venus, though he is sometimes, from position, nearly equal to her in size.

Mars, when in opposition to the Sun, is five times nearer to us than when in conjunction. This has a very visible effect on his appearance. It is for this reason, that we see him at some times small, and very dusky, and at others, so large and luminous, that an un instructed eye would be likely to take him for another star. The spots of Mars are numerous and very distinct, by which his revolution round his axis has been exactly determined.

Mars revolves in his orbit with the velocity of about 55,287 miles per hour, and on his axis at the rate of 556 miles per hour at his equator.

Mars increases and decreases like the Moon, except that he never forms a crescent, as do the inferior planets. The atmosphere of Mars is supposed to be denser than that of the Earth. The analogy between Mars and the Earth is by far the greatest in the whole solar system.

A spectator in Mars could rarely, if ever, see Mercury, except when passing over the Sun's disk. Venus will appear to him at about the same distance from the Sun as Mercury appears to us. The Earth will appear about the size of Venus, and never above forty-eight degrees from the Sun; and will be, by turns, a morning and evening star to the inhabitants of MARS.

To this planet our Earth and Moon appear like two moons, sometimes half or three-quarters illuminated, but never full.

* Augustus was born B.C. 63, and died A.D. 14.

† Vernacular, of one's own country; natural; native.

IVY.

The Ivy, so much revered by the ancient bacchanalians,* is a plant of the evergreens, and usually twines about trees, sticks to walls, or creeps on the ground.

The Greek and Latin poets abound in allusions to the Ivy;



Ivy—(*Hedera Helix*).

and, as in the case of almost every other object of their admiration, they have connected it with innumerable fables. Thus they say, that its Greek names *Kissus* and *Kittus*, are derived from the appellation of an infant boy, who was transformed into *Ivy*, by *BACCHUS*, the “*God of Wine*.” OVID very prettily alludes to the *Ivy* in his fabled *Metamorphosis*† of the mariners and vessel of *Acetus*,‡ which he thus describes:

The mighty miracle that did ensue,
Although it seems beyond belief, is true.
The vessel fixed and rooted in the flood,
Unmoved by all the beating billows, stood;
In vain the mariners would plough the main
With sails unsurl'd, and strike their oars in vain;
Around their oars a twining Ivy cleaves,
And climbs the mast, and hides the cords in leaves;
The sails are cover'd with a cheerful green,
And berries in the fruitful canvass seen;
Amidst the waves a sudden forest rears
Its verdant head, and a new spring appears.

The Ivy, though a climbing plant, is not strictly a parasitical one, as it is usually described to be. For unlike the *Mistletoe*, and others, it merely supports itself upon a tree, and derives its nourishment not from the tree, but from the earth, in which its roots are imbedded.

The Ivy is sometimes trained to a stake and allowed to form a

head; in this manner it forms one of the most attractive and ornamental of all the evergreens. In short, in every way, whether trained to a stake, entwining itself round an aged Oak or Elm, or spreading over the surface of a wall or ruined building, the *Ivy*, with its brightly verdant leaves and clustering berries of black, is an object which cannot be looked upon without admiration.

The *Ivy* flowers most abundantly in *October*, if attached to any thing by which it can support itself; but if allowed to spread itself out unsupported save by the earth, it will produce no flowers.

The *Ivy* is found to be indigenous* to nearly all European countries; and both its leaves and its berries formerly had a high place in the “*Materia Medica*.”

HISTORY OF ARTS, SCIENCES, AND INVENTIONS.

COULD we trace the HISTORY of ARTS, SCIENCES, and INVENTIONS from their commencement to the present time, truly delineate the occasions that gave them birth; their first rude efforts, and the successive improvements which necessity, convenience, and the acquirements of luxury occasioned in them, a work might be composed of great extent, of infinite utility, of most intense interest, and capable of affording much *Amusement* blended with *Instruction*.

But the early *History* of the ARTS, like the history of mankind, is hidden in the obscurity of ages. It required a very considerable progress in knowledge and refinement to discover the art of recording and transmitting to posterity† remarkable events, and those which were handed down by tradition‡ from generation to generation, were so distorted by ignorance, and magnified by credulity§ and superstition,|| that it is now next to impossible to divest them of their fabulous¶ additions, and to draw any inferences from the relation that will, in any degree, approximate the truth.

The Scriptures give us reason to believe, that the first men were instructed in such arts as are essential to the support and comfort of life by immediate communications from Heaven; thus we find it recorded, *Gen. iii. 21*; “*Unto Adam also, and to his wife, did the Lord God make coats of skin, and clothed them*; that is, they were instructed by a heavenly Being, how to procure and make them, and thus did the custom of guarding against the inclemency** of the weather by artificial clothing take its rise. In the next chapter we are told that *CAIN* was a tiller of the ground, and *ABEL* a keeper of sheep. While the EARTH was thus in its infancy, and its inhabitants amounted to no more than four or five persons, nothing less than Divine instruction could have informed man that its produce could be improved by cultivation, could have directed him what methods to adopt for that purpose, and show him how to construct the instruments necessary to the success of his attempt. At so early a period likewise, we have reason to suppose, that the same Divine influence instructed *ABEL* in the method of domesticating and rendering them useful to mankind; his own unassisted efforts would have availed little for this purpose; nor would he have been aware of the superior value of sheep over other wild

* Those who attended the feasts of Bacchus. Figuratively riotous drunken persons.

† *Metamorphosis*, the change of shape in any thing. The change of one animal into another. In the plural *Metamorphoses*.

‡ *Acetus*, the pilot of the ship which carried away *Bacchus*, who had been found asleep at *Naxos*. The crew were changed into sea monsters, but *Acetus* was preserved.

* Indigenous, native; originally produced or born in a country.

† Posterity, those that are born, or live after descendants.

‡ Tradition, an oral, or unwritten account from age to age.

§ Credulity, too easy of belief.

|| Fabulous, figured, forged, full of fables.

¶ The observance of unnecessary rites in religion, idle fancies, and

approximate, come near.

** Clemency, unwillingness to punish; great tenderness.

animals, had he not been enlightened on this subject from above.

But the *Heathens*, who possessed not the advantage of the *Scriptures* to inform them of the origin of all things, and to show them that the same Almighty Being who brought men into existence, instructed them likewise in such arts as were absolutely necessary for their support and comfort, leaving it to their own ingenuity to discover, by degrees, such as were rather calculated to promote convenience, than to minister to their necessities; attributed the invention and discovery of the useful arts to certain personages whom they worshipped as Deities: thus, *AGRICULTURE* was taught, say they, by the *Goddess Ceres*, and her servant *Triptolemus*; the discovery of *fire*, and the invention of the art of working *METALS*, was attributed to *VULCAN*,* who, in consequence was considered as the *God of Fire*, and of *Blacksmiths*.

Thus it appears that the Heathens^t had some faint idea of the truth; they did not consider it probable that the unassisted reason of man would have led him to invent those useful arts without which his life would with difficulty have been supported, and must have been wretched in the extreme, but attributed the discovery of them to beneficent Deities, who, taking compassion on his destitute state, instructed him how to ameliorate it; to raise abundant supplies of food from the fertile bosom of the *EARTH*; to fabricate garments by spinning and weaving the fleeces of the sheep; to construct habitations of wood and stone for protection from the inclemency of the weather, and the attacks of wild beasts and robbers; to inclose lands and settle property on a firm basis, that each man might reap the produce of his own industry; to dig metals from the mine, and fashion them into utensils for numerous valuable purposes; to launch the bark on the mighty ocean, and interchange commodities with distant nations. These and a thousand more valuable inventions were attributed by them to *MINERVA*,† *CERES*,‡ *NEPTUNE*,|| *VULCAN*, ¶ *PAN*, || *MERCURY*,** and a host of other supernatural agents, who they supposed kindly interested themselves in the affairs of mankind, and lent them the assistance of their superior wisdom.

If we may be allowed to follow their example and deify two ideal beings, we may attribute the invention of those arts which were not originally communicated to man by the Almighty Father, to two goddesses, *NECESSITY* and *CONVENIENCE*; the former contributing most powerfully to the discovery and fabrication of things essentially useful, the latter to the framing and fashioning of things that contribute to the indulgence of luxury, pomp, and pride; the former was the first prime mover of the ingenuity of man; and, until her demands were complied with, and her directions obeyed, the latter was unattended to; but, in proportion as *NECESSITY* relaxed in her requisitions, *CONVENIENCE* put in her claims; and, as they are infinitely more numerous than those of the former, they still occupy the attention of mankind, call forth his intellectual faculties, exercise and increase his annual dexterity, and will continue to do so until the end of time.

Many fancied Philosophers,†† and well meaning, but ignorant

persons, imagine, that refinements in *ancient arts*, and the discovery of *new arts*, tend to the disadvantage of *MAN*; that the indulgence of the noble and wealthy in fine houses, fine clothes, splendid equipages, rich jewels, and other luxuries, is an offence against propriety and the welfare of their poorer brethren; that the wealth which they thus expend in articles of show and splendour would be much better bestowed in deeds of charity and beneficence;* that rich men are fattening on the necessities of the poor, and contrasting their excessive enjoyments with the squalid wretchedness of those beneath them.

But this is by no means a fair statement of the case. Did the higher classes of society live in a state of primeval † simplicity; were they content with habitations that would merely shelter them from the weather, with garments of a coarse and homely texture, spun and manufactured by the members of their own families; were they satisfied with transporting themselves from place to place on foot; or in such rude vehicles as would merely answer the purpose for which they were designed; were the jewels with which they now adorn their persons to be allowed to rest unmolstid in their native mines, what would become of the millions who now procure a comfortable maintenance by the exercise of their industry, their skill and ingenuity? The mere cultivation of the ground, tending of cattle, and fabrication of things of necessity only, would not afford employment for half the population of the earth, so that multitudes must then subsist in idleness on the earnings of their more active brethren: idleness would render them corrupt, and ready for the most nefarious undertakings, and much greater misery would therefore unavoidably ensue, than is experienced under the present order of things.

The world is so constituted by the uncaring wisdom of *Providence*, that some portion of suffering must be the lot of all its inhabitants. One reason for this dispensation probably is, to quicken the faculties, and arouse the energies of man, that by his ingenuity he may lessen, if not wholly remove them. This has been the consequence in innumerable instances, and will continue to be so, in spite of the mistaken opinions of those who deny the refinements and luxuries of life, though, when opportunity offers, they do not always refuse to partake of them in moderation.

A distinction must, however, be made between the proper use and the abuse of those refinements, which have for their object the amelioration of the condition, and the increase of the comforts and enjoyments of mankind. The former entails a blessing, the latter a curse on those who practise it. "WINE," says the sacred writer, "*cheereth the heart of man*, and *oil maketh his face to shine*;" the invention of wine and oil, therefore, was a real advantage to the world; but what dreadful consequences have ensued from an abuse of the former. Even *NOAH*, that righteous patriarch,‡ who was considered worthy to be exempted from the general destruction of mankind, exposed himself, in consequence of excess in this genial liquor, in an indecent manner before his children.

What dreadful crimes, what bloody quarrels, what destruction of property, and annihilation of domestic comfort have arisen from drunkenness; how many constitutions which promised length of days, and the enjoyment of uninterrupted health, have been prematurely § broken up, and the miserable victims, after dragging on

* *Vulcan*, the son of Jupiter and Juno. (HOMER.)

† *Heathen* a Pagan who worships false gods, and is not acquainted either with the doctrines of the Old Testament, or the Christian dispensation.

‡ *Minerva*, the goddess of wisdom and war, and of all the liberal arts.

§ *Ceres*, the goddess of corn and of the harvests.

|| *Neptune*, the god of the sea.

¶ *Pan*, the god of shepherds, &c.

** *Mercury* the god of commerce, of thieves, messenger to the other gods, supernatural, beyond the powers of nature.

†† *Philosopher*, a man well skilled in knowledge; but more literally, a lover of wisdom.

* *Beneficence*, generosity, a good and kind action.

† *Primeval*, original, such as was at first.

‡ *Patriarch*, the head of a family, or church. A father of a family; one who governs by right of fraternity.

§ *Prematurely*, too soon; too early.

a few years of sickness and debility, have yielded up their lives in the meridian of their days, from their too great attachment to the exhilarating juice of the grape. Thus does man too frequently change, by its abuse, this blessing into a curse ; yet none will say, that the invention of the art of making wine might not have been a most valuable one to mankind, had they kept their gratifications within the bounds of moderation, and not abused the favour thus bestowed on them by the Almighty. It might have contributed to strengthen the feeble body, to cheer the dejected mind ; and to contribute to that social mirth which can be reflected on without remorse.

The invention of gunpowder may be supposed, by superficial thinkers, to be one that has been productive of evil ; its chief use being for the purposes of warfare, and the destruction of men and animals ; it may certainly, with an appearance of propriety, be classed among the unhappy discoveries which have increased the miseries of mankind, without contributing, in any way, to their benefit.

But a dispassionate investigation of facts will shew, that this is an unjust opinion. Had the invention of gunpowder introduced war, which had not previously existed, the case would have been widely different, and we should have occasion to lament that so deadly a composition had ever been formed ; but as this scourge existed in all its horrors, long before the invention of gunpowder, as it has in some degree, as will be pointed out more at large when we come to speak of this composition, rendered it less sanguinary,* and been exceedingly useful in rending rocks, demolishing old and massive buildings, and performing many useful services, by its amazing power : it may well be reckoned among valuable inventions.

Amidst the vast field which lies before us, it is very probable that some things of importance may escape our notice, and some mistakes be made, as it respects others ; but should the success of the "Guide to Knowledge," continue as it has hitherto, every improvement that farther research, or friendly intuitions, may suggest, will be made with diligence and care.

One important feature of this little work will be, that of attempting to remove unfounded prejudices against discoveries, which, by many are considered as injurious to the interests of society, and the cause of mischievous innovations. Any thing that occasions an extensive change in the practices and usages of a large portion of mankind, must necessarily, for a time, induce some confusion, and considerable inconvenience, among those who are more immediately affected by it ; but, after a period, more or less protracted, according to the magnitude of the change that has been made, these inconveniences are removed, and the advantages alone are felt. To estimate the value of any important invention by which labour is abridged, vast power is attained, and work performed with greater despatch and more excellent skill, we should cast a retrospective† glance at the state of things before this engine was framed, and compare it impartially with the present ; the result will, in general, speak greatly in favour of the alteration.

Should steam vessels supersede‡ the use of sailing ships, and steam carriages those drawn by horses, the amazing alteration that will take place in commercial economy, will cause grievous inconvenience to thousands ; loud and long will be the complaints of interested ignorance ; many and plausible will be the arguments adduced against them, but the incalculable advantages that will result from their general introduction ; the wonderful im-

provement that they will make in the comforts and conveniences of the whole world, will ultimately overcome all opposition, will convince those who are open to conviction, that they are a real blessing to mankind at large, and render them, in a sense, omnipotent ;* ubiquity † will be almost attainable by a mere mortal, as, with astonishing speed, and inconsiderable fatigue, he may traverse kingdoms and states in all directions ; be seen on the same day in cities far remote, and set winds and waves at defiance. This wonderful application of a power, apparently so insignificant, but really so vast, will, in a few years, affect a more radical change in the manners, customs, and condition of the inhabitants of the globe, than many preceding centuries have accomplished.

CIRCULATION OF THE BLOOD.

For the discovery of this wonderful function of nature, we are indebted to Dr. Harvey, who lived in the time of Queen Elizabeth ; the knowledge of which has conferred incalculable advantages upon mankind. The velocity with which the blood must flow when the heart beats violently is inconceivable ; for, in the ordinary course of nature, the heart contracts 4000 times in one hour, each time ejecting one ounce of blood.

To be more particular in our description, it is necessary to state, that there is provided in the central part of the body a hollow muscle, invested with spiral tubes, running in both directions. By the contraction of these fibres, the sides of the muscular cavities are necessarily squeezed together, so as to force out from them any fluid which they may at that time contain : by the relaxation of the same fibres, the cavities are in their turn dilated ; and, of course, prepared to admit every fluid which may be poured into them. In these cavities are inserted the great trunks, both of the arteries which carry the blood, and of the veins which bring it back. This is a general account of the apparatus ; and the simplest idea of its action is, that by each contraction a portion of blood is forced as by a syringe into the arteries ; and at each dilation an equal portion is received from the veins. This produces, at each pulse, a motion and change in the mass of blood to the amount of what the cavity contains, which in a full-grown human heart is about an ounce, or two table-spoonsful. Each cavity at least will contain one ounce of blood. The heart contracts 4000 times in one hour ; from which it follows, that there passes through the heart every hour 4000 ounces, or 350 pounds of blood. Now the whole mass of blood is about twenty-five pounds ; so that a quantity of blood, equal to the whole blood within the body, passes through the heart fourteen times in one hour, which is about one ounce every four minutes.

Artificial man extends with his sphere, but, as ! that sphere is microscopic. The reverse is the man of mind : When he walks along the river of Amazons ; when he rests his eye on the unrivalled Andes ; when he measures the long and watered Savannah ; or contemplates, from a sudden promontory, the distant vast Pacific—and feels himself a freeman in this vast theatre, and commanding each ready produced fruit of this wilderness, and each progeny of this stream, his exaltation is not less than imperial. He is as gentle as he is great. He becomes at once a child and a king.—*Gillert.*

A man born free, who is unlettered, is to be regarded as a beast, or a man void of understanding.—*King Affred.*

* Sanguinary, bloody.

† Retrospective, looking backwards.

‡ Supersedes, to make void, to suspend.

* Omnipotent, all-powerful.

† Ubiquity, a being in all places.

SELF INSTRUCTOR IN ENTOMOLOGY.

II.—BLACK COCKROACH OR BLACK-BEETLE.

Order.—HEMIPTERA.

Take a light and let us go down to the kitchen;—what a sight! twenty Black-Beetles are scampering in every direction to their secret haunts. Catch one, and do so carefully, lest you break his fine antennæ, or otherwise injure him; for although it be not quite true, yet it is useful to believe, that,

The poor beetle that we tread upon,
In corporal suffering, finds a pang as great
As when a giant dies.

Now put him beneath a glass, and observe him narrowly, while we proceed to describe his scientific characters.



A, BLACK BEETLE—B, GIANT COCKROACH.

The Black-Beetle (*Blatta orientalis*), is an hemipterous insect; that is, he belongs to the Linnean order, HEMIPTERA. The term, hemiptera, signifies "half winged;" and expresses the size, fashion, &c., of the elytra, or wing cases, comparatively with those of the first order, Coleoptera.* If you will examine the Black-Beetle, you will observe that unlike the Stag-beetle, which we last examined, the wing-cases cover only half the abdomen, and that they do not join by their edges in a straight line, but that one of them overlaps the other. It is this circumstance, by which an hemipterous insect is mainly distinguished. But this character is usually modified, and further distinguished by the prevalence, in a greater or less degree, of another quality. In a coleopterous insect, the wing-cases are commonly of a hard crustaceous texture, but in an hemipterous insect, they are ordinarily of a parchment-like, or half-leathery consistence; and further, both the wing-cases are not always of equal strength, the upper and overlapping case being often of a hard and horny nature, while the under one, is a thin fly-wingy membrane. These remarks will enable you to see very clearly that the Black-Beetle is an hemipterous insect; and you will also be pleased to learn, that in acquainting yourself with the simple facts, upon which his character in the Linnean classification depends, you have acquired the first, and a very considerable step towards a knowledge of above a thousand different sorts of insects;—for of so large a number of species, is the order

hemiptera composed. Many of them are known to you under the every-day names of Cricket, Locust, Grasshopper, Cochineal-insects, Lantern-flies, Bugs, &c., &c., of all of which we shall discourse on future occasions. Let us look now however, to our Beetle, whose sensitive alarm, and love of liberty, shown in his incessant efforts to escape, interests our better feelings;—he is a noble fellow; handsome, clean, and active; but notwithstanding this, the world, especially its fairer portion, have conceived an unreasonable prejudice against him, and right or wrong, he has become an object of public hate, and is universally abhorred. But nevertheless, the Black-Beetle is a useful fellow, and totally undeserving of public obloquy. He might be called the kitchen scavenger. His appetite is strong, for crumbs of bread, spots of grease, particles of meal, &c., &c., so many thousands of which are every day spilt unheedingly upon the floor, from which they get trod, and swept into the joinings of the boards and other places, where they would putrify, unless our industrious Beetle, were on the alert to pick them up for food. But as if aware of the national antipathy against "things that crawl," they never commence their operations till near midnight, and always leave them before the morning dawns. It is amusing, on such occasions, to break in upon their feastings:—they have acquired by woful experience, an hereditary hatred to lighted candles, and no sooner does the faintest beam irradiate their darkling merriment, than—scamper—scramble—every one runs to his nest, and the floor which on the preceding moment was black with numbers, becomes again a solitary plain of deal boards. The Black-Beetles are members of the genus *Blatta*, the species of which all bear a strong general resemblance to each other; they run fast, fly well, avoid the light, are omnivorous, and the more voracious species are the pests of the kitchen and bake-houses of the tropical regions. Our Black-Beetle is distinguished from the other members of the genus, by the shortness of the wing-cases, and from their being scored with oblong furrows. He can fly swiftly, but seldom takes wing, trusting rather to his legs, which are very long, slender and elastic. He emits an offensive smell, which Kirby and Spence are of opinion serves him for self-defence, and saves him from many enemies. His native land is South America, from which place he was first brought to this country by some East India ships: whence his trivial name of ORIENTALIS—*Blatta orientalis*. Mr. Wood has observed, "it is fortunate for us, that the largest of the genus, the *Blatta gigantea*, cannot be naturalized, since the ravages it commits are such, as to make it hardly bearable in a house. In tropical countries, particularly in South America, these insects commit the greatest depredations; nothing comes amiss to them; they get at everything, and what they cannot eat they spoil with their excrement. Drury describes them as very fond of ink, into which they are apt to fall, and soon become so offensively putrid, that a man might as well sit over the cadaverous body of a large animal, as with the ink in which they have died. They fly into the faces and bosoms of persons, exciting by their spiny legs, a sudden horror, not easily described. They make a noise in the night like a smart knocking with the knuckles on the wainscot, so that three or four of them will make such a drumming as to disturb the rest of those who are not very good sleepers. Drury adds, "that the sick and dying have their extremities attacked by them, and that the ends of the toes and fingers of the dead are frequently stripped of the skin and flesh."

Y.

(For an explanation of the entomological terms used in these articles, see KENNIE'S "ALPHABET OF INSECTS;" from which, by permission of the proprietors, our cut in the last supplement, of 'the Swallow-tailed Butterfly, was copied.)

THE
GUIDE TO KNOWLEDGE.

EDITED BY MR. W. PINNOCK,

AUTHOR OF "PINNOCK'S CATECHISM," "GRAMMAR OF GEOGRAPHY AND HISTORY," ETC., ETC.

No. XVII.]

SUPPLEMENT, OCTOBER 1, 1832.

ONE PENNY.

GUIDE TO THE NATURAL HISTORY OF OCTOBER.



FOXHOUNDS—See page 131

OCTOBER

The mild and gentle month of SEPTEMBER has passed away, but, like the tiger, which, when unexcited, seems the mildest and gentlest of beasts, has occasionally roused itself into fury, and spread de-

"We have been compelled to issue an extra number this month to enable us to publish a part, in consequence of the reception of a notice from Messrs. Whittaker and Co., of their having obtained an injunction from the Court of Exchequer (obtained upon their *ex parte* statement) to restrain the sale of the Geological Chart contained in No. 12. The publisher begs to assure the public, he will lose no time in applying to the Lord Chief Baron for the dissolution of the injunction, and he doubts not but the sale will be resumed in a few days.

VOL. I.

vastation around. Its departing moments resemble those of CROMWELL, whose exit from this world is said to have been accompanied with a violent storm, which unrooted houses, and tore up trees by the roots.

Many a noble oak and stately elm, which, in all their pride and loveliness, were just assuming the hues of autumn, have the equinoctial gale laid low, many a tall ship, which set sail, nobly laden under the most favourable auspices, and enjoyed a prosperous voyage, with gentle winds, and genial suns, has been wrecked by them in sight of port, and her precious freight overwhelmed by the waves. Happily, this fit of fury is of short continuance, and OCTOBER is usually ushered in with the same calm and serene weather, which so charmed us in her elder sister—September. But the mornings and evenings now grow fresher and more chilly, and the former frequently presents us with the ground covered with hoar frost, and sometimes with snow. The matin chant of the Robin, which had given us warning in September, of the approach of

WINTER, is now heard from our chimney top, more frequent, and more vigorous than before, as though it would rouse us to make preparation for that rigorous season, now so near, and to lay in a store of comforts to soften its severity.

Now should the coal shed, and the wood stack be replenished, and warm garments provided to impart to ourselves, and to our habitations that genial heat, of which WINTER would otherwise deprive us.

Now is the *Robin* our only monitor on this occasion. The *Squirrel*, the *Dormouse*, the *Hedgehog*, and the *Water Rat*, prepare warm nests, and lay up provisions for the winter about this time, as does likewise the little *field Mouse*; and *Snakes* and *Toads* retire under ground. It is only among men, who boast of superiority over such creatures as these, that carelessness and improvidence are to be found. "Go to the *Ant*, thou sluggard, consider her ways, and be wise."

In this month the forest, which was beginning in September to assume its autumnal tints, puts on all its mature glories, previous to its being compelled to resign them wholly. The eye is charmed with the rich variety of hues which has succeeded to the deep green of summer, and the enjoyment would be complete, were it not that, like the flashes of an expiring taper, these beauties are but the hues of *Death*, the precursor of destruction. By degrees the leaves drop and leave the branches, which they clothed and ornamented, naked and bare to the wintry storm, and the driving tempest.

Yet amidst these melancholy emblems of decay, we see instances of the providential care of the ALMIGHTY for the meannest of his creatures. For some time, the birds of the air have been living plenteously and luxuriously on the scattered relics of the harvest, and the autumnal fruits; but these supplies will soon be exhausted, and the little animals would perish with hunger in the winter, had not the Father of all provided a variety of berries which are now glowing in the hedges, and amongst the underwood of the forest, for their support, during the inclement season, when other food is not to be procured; the *hip*, the *haw*, the *woodbine*, the *yew*, and the *holly*, display the most brilliant red, whilst the *blackberry*, the *sloe*, and the *privet berry*, tempt by their rich and glossy blackness.

Warm days and chilly evenings now produce fogs, and render attention to health necessary, that colds and coughs may not ensue. Fogs owe their origin to the watery vapours raised by the Sun's heat, which being condensed in the cold atmosphere, not sufficient to produce rain, but enough to render their specific gravity, or weight, greater than that of the higher regions of the air, descend to the surface of the Earth. Persons who judge only by appearance, suppose that Fogs rise from the Earth in their visible form, whereas, the fact is, that they do not become visible, or assume the form of fogs, until they approach the Earth's surface.

As September was the commencement of havoc amongst the *Partridge* tribes, so does OCTOBER bring death to many a *Purassant*, proudly displaying the glossy richness of his beauteous plumage in the Sun, unaware that the dreadful tube is pointed for his destruction. It is, perhaps, a trite remark, but not unworthy of repetition, that superior beauty is bestowed on the male sex of almost every animal but *MAN*.

Providence has wisely ordained, that the season of the decay of the fruits of the Earth, should likewise be the season for preparing their renovation. OCTOBER is a favourable month for sowing such seeds as are sufficiently hardy to endure the winter frosts, and for transplanting shrubs and trees; the very art of doing these things is, to the reflecting mind, a gratifying assurance, that vegetation, though it will soon seem dead, is only enjoying a salutary repose, to enable it to burst afresh into life with renovated vigour.

To provide against the indolence and negligence of *Man*, the *God of NATURE* has ordained, that trees and plants shall be carried to different places, and propagated by irrational animals; the *Squirrel* lays up hoards of acorns and nuts in the ground, and forgetting some of them, they spring up, and produce new trees. Many seeds possess the vegetating principles after they have passed through the bodies of birds, and have been scattered by them in different directions. So wonderfully has Providence provided for the continuance of vegetable life.

This month was celebrated amongst the *bons vivans* of ancient times, as particularly favourable to the brewing of strong beer, and by way of eminence, such beer was denominated stout, or nut-brown

October. Malt liquor still continues to be the favourite beverage of the labouring poor, and 'tis such as use much exercise, it is, perhaps, as little injurious as any fermented liquor can be. But, the idea that it tends to render man robust, and equal to the endurance of great fatigue, is utterly fallacious. The heroes of remote antiquity, who could tear up trees by the roots, and throw stones so heavy as would baffle the strength of twelve men, even in Homer's days, used water as their daily beverage, though they indulged in wine on days of feasting and of extraordinary solemnities.

Amongst well informed persons, the use of nature's beverage is become almost universal, and in consequence, indigestion, dropsy, flatulence, and stupefying head-aches, are comparatively unfrequent. WATER supports the strength and health of all other animals, even those that labour; why should man be the only exception? What distress, what crimes, occasioned by drunkenness, would be avoided, were this propensity to the love of strong drink eradicated from our nature. And even where excess is unknown, how many comforts, and solid advantages, might be purchased with the money expended in useless and pernicious liquors.

Of the Celestial phenomena observable in this month, the most interesting to persons in general are as follows:

The *full Moon*, denominated from the season, the "HUNTER'S Moon," takes place on the eighth; it affords, in a degree, the advantages, which we mentioned as pertaining to the "HARVEST Moon," that is, it rises with less difference of time each night, than in any other month, except September. In our country this is not of much importance, as it respects gathering in the fruits of the Earth, but it probably is in those countries where the vine is extensively cultivated, and great quantities of wine are made. By the light of an early and brilliant Moon, the labours of the vintage may be carried on to a late hour, and thus much time may be saved, and much risk avoided.

In the early part of the month, MERCURY is west of the SUN, and rises a short time before him; he is, therefore, a *Morning star*; but from his short distance from the Sun, and his small size, it is extremely difficult to discover him by the naked eye. Towards the end of the month he is so near the orb of day that he becomes wholly invisible to the inhabitants of the Earth.

VENUS is an *Evening star* this month; and JUPITER comes to the meridian about ten at night. SATURN is a *Morning star*, and will be in conjunction with VENUS at three in the morning of the thirtieth.

DOGS.

A VERY puzzling circumstance in the natural history of the dog is the number of varieties into which the family is divided, but we are of opinion that the matter has been made one of unnecessary difficulty; and that a little common sense would have long since done what folios of conjectural science have failed to accomplish. The grand point at issue is, what was the original animal from which the present diversified races have descended. Some father them upon the wolf, some the jackal, and others the fox. Without going into the details of any of the respective arguments, we would direct attention to the circumstance that the Newfoundland, the water-spaniel, and other water-dogs, have their feet webbed, and are, in other respects, evidently created for an aquatic life; but the wolf, the jackal, and the fox, are totally destitute of webbed feet, and are in no wise adapted to a watery element. Now as a webbed foot is an organization contrived for an especial purpose, we think it highly absurd to suppose that it could have originated in a chance, or accidental manner; we are quite ready to allow that domestication produces great changes in animals, but such changes are always of a comparatively superficial kind, and consist chiefly in an alteration of *form*, *size*, *colour*, &c.—but never amounting to a creation of new organs, as must be the case, if we admit the possibility of the unwebbed foot of a wolf, jackal, or fox, becoming the webbed foot of a water-dog. Fowls have been bred into thousands of varieties—but they have always continued fowls—a duck has never been produced between them;—the sloe of the woods has been improved into the Orleans plum—but the sloe and the plum, are both plums, not apples or acorns; neither can any horticulture whatever, with all its arts of grafting and pollen-crossing to boot, ever make them so. It is use-

lets us talk of the influences of climate, and tell us that the Alpine wolf, and the African jackal, have, by a change of temperature, become Spanish pointers, or English bull-dogs. Before we can believe this, they must first prove to us that by a similar transition, Bengal tigers may change to English race-horses, or Alderney oaws to Indian elephants. Nero, the Exeter-Change Lion, was kept here in an iron cage, scarcely longer than himself, for nearly twenty years, fed upon food far different from the ever-varying prey of his native woods,—breathing an air which to him must have been almost perpetual winter. All this—and yet we believe he died,—not bull-dog, but Nero, the Lion.

The advocates of this transmutation system grow very amusing, when they inform us that they find no dog so like the wolf or the fox, as the shepherd's dog; and that consequently the shepherd's dog is the patriarch from which greyhounds, turnspit, pointers hounds, water-spaniels, curs, &c., &c., &c. are lineaely descended. It is peculiarly unfortunate for this theory, that the first product of the wolf and fox, should have been a shepherd's dog, for we find that a mule strictly inherits the properties of its parents, the horse and ass; and that Wombwell's lion-tigers possess the noble bearing and the sly malignity of their different parents, each however in a subdued degree. But here we find the son of a wolf and fox, both of them thieves, and the stealthy and incessant enemies of sheep, suddenly, and in total opposition to all the laws and analogies of nature, becoming the friend of its parents' foes;—honest, docile, faithful, the friend of man, and all these amanabilities by immediate descent from creatures proverbially thievish savage, treacherous, the open enemies of man and man's. Oh this is too much. Again, when did this strange relationship commence? for we find the shepherd's dog mentioned in the book of Job—the oldest book in the world;—but perhaps the shepherd's dogs of that day, relapsed for a time into wolves and foxes again.—Why not?

We are of opinion the real truth is, that the varieties of the dog, are *created varieties*, that different kinds were originally made by God, to suit different climates and circumstances, and to serve the various wants of man. This view of the case, while it agrees with self-evident truth, harmonises with that law of creation which has made the dog so infinitely useful, that from the remotest ages, his servitude has been called friendship.

The Egyptians worshipped the dog under the name of Annubis, the origin of which is stated by some to be this: "Annubis, a companion of Osiris, having worn the skin of a dog as an emblem of courage, the animal was afterwards deified, as Maccedon, another companion of his, on wearing the skin of the wolf, was the means of that animal being rendered sacred." Pococke seems to believe that these reasons are probable, as both these deities are represented with human bodies, with the heads of the dog and the wolf; originating, perhaps, from these men wearing the skins over their heads, as Hercules is represented with the skin of a lion. Another, and more probable reason, is adduced respecting the worship of the dog; which is, that the dog-star, which appeared before the inundation of the Nile, signified to the inhabitants to prepare for removing to a place of safety; and which, being a true characteristic of the watchfulness of that faithful animal, excited their gratitude, so as to consecrate this quadruped under the name of Annubis. However, exclusive of these reasons, the dog was anciently esteemed in Egypt for its sagacity, faithfulness, and other excellent qualities, besides ridding the country of ravenous animals, which properly rendered it the companion and associate of man. Pythagoras, likewise, after his return to Greece from travelling in Egypt, founded a new sect, and one of the doctrines he inculcated was, the transmigration of souls into animals; and upon the death of any of his disciples, they held a dog to the mouth of the dying man to receive his departing spirit, under the idea that there was no animal that could perpetuate the virtue he possessed better than that quadruped. Such an idea was no doubt received in Egypt, and perhaps improved upon by the Grecians, which proves the high esteem in which the animal was anciently held."

These idolatries explain to us the degradation of the dog by the Jews, who appear to have been the first who used his name as a term of reproach.—The severity of the Mosaic law, could not tolerate the least appearance of idol worship, and therefore the nation branded the dog with uncleanness. To this day, all over the east, "dog" is the most offensive epithet with which a person can be saluted.

FARMERS' DOGS.—*The English Sheep Dog* is larger and stiffer than the shepherd's dog of Scotland, stands higher upon his legs, and is altogether of a more agile and vivacious nature. His tail, by a barbarous custom, has for so long a time been cropped off close to the rump, that it is believed cruelty has at length triumphed over nature; and that pups are sometimes whelped tailless; this however is very questionable. The sheep-dog is usually of a black and white colour, smooth, but more commonly rough-coated, sharp of hearing, with his ears pricked forward, but pendulous at the tips; docile and intelligent in his intercourse with man, but fierce and uncompromising with the object of his charge—the sheep must be dutiful, or a bite upon the heel or ear corrects the disobedience. Without his assistance it would scarcely be possible to drive a flock of a herd to market. Can this be a chance bounty?

THE SCOTCH SHEEP DOG.—In his general appearance he has something of the form of a spaniel; his ears nearly pendulous, head pointed, shaggy coat, with a full thickly-haired tail. In sagacity and excellencies exactly adapted to his purposes in society, he has no equal; he fills a gap in human wants, which without him, must have remained empty, to the manifest destruction of our pastoral labours. Immense flocks of sheep range over vast plains, and mountainous solitudes without any other control than his. He receives the shepherd's commands, and seems almost to possess an ubiquity in their execution. He corrects the erring judgment of his master by his own superior sagacity, preserves the integrity of the flocks, knows every individual in his own and his neighbour's charge, hunts out every trespasser, and returns him to his proper companions. Without this astonishing faculty no property in flocks could be maintained, intrusions without number would confuse the shepherd's best care, no farmer would know his own. But as it is, the shepherd may sleep, he may lie upon the grass, as Ferguson did in his sheep-watching days, and construct maps of the stars, but still his flock would be kept distant from others, by the sagacity of the dog, by whose promptitude also, the scattered thousands might be immediately collected into a compact host, marshalled into a column, and driven with unbroken order into the market-road. Here new peculiarities would manifest themselves:—*the dog keeps them to the road*; simple as this act may appear, we believe no other creature could accomplish it; he guards every bye-path, anticipates every cross-road, threatens the wandering, bites the stragglers, keeps the ranks, and at the same time, is scarcely a minute from his master's heels.

THE MASTIFF.—This noble creature seems to be expressly formed for the guardianship of unprotected property. Large and deep voiced, to intimidate; fierce and strong, to defend and punish; sagacious, to discover the wily schemer of the midnight robber; faithful, to resist a bribe; and kind, docile, and affectionate to his keepers. These are the admirable qualities which designate him to this most useful office. The general characteristics of his form are a robust, but symmetrical frame, jaws of immense strength, lips and ears pendulous. His coat is stiff, but smooth, and of a reddish colour.

THE TERRIER.—The determined enemy of farm-yard vermin; to foxes, otters, polecats, weasels, badgers, rats, mice, &c., &c., he is a born foe. The gentle rabbit also suffers from his destructive propensities. These qualities have gained him considerable esteem, and hence a well-bred terrier is an object of some value. The principal varieties may be reduced to the *rough* and *smooth* kinds. The rough breed was originally brought from Scotland, where it is still found in the greatest purity. Blackguards are very fond of a dog produced between the bull and terrier breeds, but they love him for his savage nature, and take pleasure in his murderous habits. How nearly allied some men seem to be to wild beasts!

SPORTING DOGS.—We shall say but little upon these beautiful creatures—they have been prostituted to vile purposes. We have pleasure in descanting on those properties which fit them for the cruel chase. The fox-hunt may be an allowable pursuit, but not even that as an amusement. We hate the term of "sport," as it regards the destruction of animal life, and have to express our strong sorrow that, in the present month, our field walks will be often disturbed by the sad spectacle of a dozen immoral men triumphing in the destruction of a "timid hare."

THE BEAGLE.—The smallest of the chase dogs; possesses an exquisite scent, and is remarkably adapted for rapid running by the length, strength, and elasticity of its hind legs.

THE FOX-HOUND.—The great boast of Britain; no other country

producing them in equal perfection. An examination of our cut will show the excellencies of their form—compact, strong, active, intelligent; they are too well suited to the low ambition of their masters. They are the most teachable of all the sporting family: every one has a name, answers to it, and obeys the command of the kennel-keeper in a way that seems little short of reason. They are naturally of a cruel disposition, and frequently destroy an aged companion, whose awkwardness has become offensive.

THE GAZEHOUND is the fleetest of all dogs. In his form he is a very personification of speed—imagination seeks in vain for an absent perfection—he seems to be a visible wind. He follows by sight, and not by scent; and was formerly only allowed to be kept by men of gentle blood.

THE POINTER is of Spanish origin, and used chiefly for discovering game. Apt, tractable, and social, he frequently acquires domestic habits, and becomes the companion of the man, as well as the sportsman.

THE SETTER.—This is the Apollo of dogs. No other species combines so many independent beauties. A fine undulating outline bounds every limb; lightness, and strength are seen in all his parts, and a peculiarly mild and intelligent eye adds a feminine tenderness of expression to the whole. He is very sagacious, has a fine scent, and squats down or “sets” as soon as he perceives game—a shot, and a death flutter, follow the indications.

WATER SPANIELS, are of different breeds, large, small, and intermediate. The large dogs are valued for their social qualities, but we are afraid, more often for their aptitude, in discovering the haunts of wild fowls. The small-breed possess the same qualities, but from long habits are, perhaps, of a more domestic nature; they are the pets of the parlour, and may be frequently seen waddling, fat, and asthmatical, after old dowagers, as highly fed and helpless as themselves.

ROUGH WATER-DOGS.—These are perfect sailors, rough, good natured, strong, and almost amphibious. Ships are seldom without them, and they are very useful in recovering things from the sea which have fallen overboard.

These brief notices will close our account. We have spoken only of those which the business of October brings more particularly before our attention. Many intermediate species we have omitted, not because they are undeserving attention, but because the business of our little work is simply that of pioneer, a “Guide to Knowledge.”

CHANGE OF COLOUR IN ANIMALS ON THE APPROACH OF WINTER.

As the cold season advances, the coats of many animals change colour. This curious phenomenon is rarely observable in our temperate climate, except in the case of the Alpine hare, which inhabits Scotland, and which from a brown colour, becomes in winter of a snowy white. It is in the arctic regions that this interesting change is most strongly manifested. Warmth is the object of the singular provision, and the principles upon which it is secured, are simply these: all persons have felt that black clothes heat the body in summer time much sooner than white ones, and hence the prevalence of light coloured garments in the hot season. But the contrary is the case during winter, black clothes are the most comfortless garments we can wear. Black substances, when they are placed in a temperature superior to their own, absorb heat more readily than a white substance, but if after heating a black and a white body to an equal degree, they are removed to a temperature lower than their own, the black body will part with its heat, and be cool much sooner than the white. White skins are therefore better fitted for preserving the body of an animal from cold, than those of any other colour: they shut in the heat, while a darker skin would have let it out. Accordingly we find this beautiful law brought to contribute to the comfort of the fowls and beasts of the arctic circle, at a time, when, without them they would perish.

DUCK DECOY.

VAST flights of ducks, at this season, appear in the low lands of Essex, Lincolnshire, and other marshy districts. By many they

are held in high estimation, as an article of food, being savoury, and easy of digestion. The ancients were passionately fond of them, and Cato is related to have preserved his household in health by the free use of ducks' flesh. Wild ducks, and other aquatic birds, are frequently caught by what is called a decoy. A decoy



is formed by digging a ditch of water (A) of a winding form, gradually narrowing towards the end, with grassy sloping banks (B) at the entrance, to invite water fowl to use it as a resting place for dressing their plumage, but in all other places covered with rushes and water plants, for concealment. The ditch, so formed, is then covered in with a net about six feet high. Along the front, and half way up the ditch, reed fences (C) are placed to hide the decoy man and his dogs from the ducks; the end of the ditch is a tunnel net (D), in which the birds are finally taken. In using this trap the first step is to conciliate the favour of the ducks, for being very shy creatures, fond of retirement, and suspicious of danger, a small matter will alarm them. The mouth of the ditch should therefore be made as peaceful and sylvan in its character as possible. The banks should also be kept clean and well fringed with aquatic vegetation. If these things be well managed, and an air of peaceful solitude thrown around the place, the birds will soon be induced to resort to it in considerable numbers. Food also should be occasionally scattered carelessly about, and it is always necessary to have a few trained or decoy ducks to assist the stratagem. When in this manner the ducks have been allured to the spot, the next things to accomplish are, the driving them from the bank into the water, without taking wing, and the leading them up the ditch to the snare at the end.

In order to get them off the bank into the water, a well-trained dog is instructed to start upon them through a hole in the front screens. The moment the dog appears the ducks take to the water, where feeling themselves safe, they do not take wing. As soon as they are in the water, the decoy ducks swim into the decoy, at the head of which they have been constantly fed, and where they have always found an asylum from the dog. The wild ducks follow, and the dog urges them forward from behind; when they have fairly entered the covered part of the decoy, the decoy man, who has watched the whole movements through narrow peep-holes in the fences, shows himself; the ducks instantly take wing, but, striking against the net, they fall again into the water, and being afraid to recede, they press forward into the tunnel net at the end, which terminates the decoy. In this manner nine dozen have been taken at a time.

MIGRATION OF BIRDS.

The migration of birds continues through the whole of the October month. The subject was generally discussed in our September Supplement, but in addition to the remarks then made, it would be interesting for the present month to consider the following things:

I.—NUMBERS. Birds migrate in parties more or less numerous, according to fixed rules peculiar to each species. But the num-

birds, in every case, are immense. Captain Flinders, in his voyage to Australia, saw a compact stream of stormy petrels, which was from 50 to 80 yards deep, and 300 yards or more broad. This stream, for a full hour and a half, continued to pass without interruption, with nearly the swiftness of the pigeon. Now, taking the column at 50 yards deep by 300 in breadth, and that it moved 30 miles an hour, and allowing nine cubic inches of space to each bird, the number would amount to 141 millions and a half.

The migratory pigeon of the United States flies in still more amazing multitudes. Wilson, in his American Ornithology, says, " Of one of these immense flocks, let us attempt to calculate the numbers, as seen in passing between Frankfort, on the Kentucky, and the Indiana territory. If we suppose this column to have been one mile in breadth, and I believe it to have been much more, and that it moved at the rate of one mile a minute, four hours, the time it continued passing, would make the whole length 240 miles. Again, supposing that each square yard of this moving body comprehended three pigeons, the square yards multiplied by 3, would give 2,230 millions, 272 thousand pigeons; an almost inconceivable multitude, yet probably far below the actual amount."

II.—SWIFTNESSES.—Vast speed is necessary to enable birds to cross oceans, without perishing from hunger or fatigue. But that they possess the necessary fleetness, will be seen from the following statements:

The swift, it has been computed, flies on the average five hundred miles daily, and yet finds time to feed, clean itself, and collect materials for its nest, with apparent leisure.

The golden eagle dashes through the heavens at the rate of forty miles an hour.

" In 1830, one hundred and ten pigeons were brought from Brussels to London, and were let fly on the 19th July, at a quarter before nine, A. M.; one reached Antwerp, one hundred and eighty six miles distance, at eighteen minutes past two, or in five and a half hours, being at the rate of thirty-four miles an hour. Five more reached it within eight minutes after. Thirteen others took two and a half hours more for the journey, or eight hours in the whole. Yet the rate was twenty-three miles an hour. Another went from London to Maestricht, two hundred and sixty miles, in six hours and a quarter."—TURNER.

III.—FIGURE.—Birds in their migrations, fly according to a determinate figure, which is connected with their form, strength, flight, attitude, destination, &c. &c.

Quails fly in an irregular cloud; their wings being short, they depend upon the wind to drive them; and hence their scattered appearance. Starlings and fieldfares fly in dense columns; herons in long straggling lines. The most curious figures, however, are those assumed by the wild-goose; Bewick observes, and Gilbert White verifies the statement, that "the elevated and marshalled flight of wild-goose seems dictated by geometrical instinct: shaped like a wedge, they cut the air with less individual exertion; and it is conjectured, that the change of its form from an inverted V, an A, or an L, or a straight line, is occasioned by the leader of the van's quitting his post at the point of the angle through fatigue, dropping into the rear, and leaving his place to be occupied by another."

ARRIVALS.

REDWING (*Turdus iliacus*)
WOOD PIGEON (*Columba palumbus*)
HOODED CROW (*Cornus cornix*)
WOOD COCK (*Scolopax rusticola*)
GREY-LEGG GOOSE (*Anser palustris*)
TEAL (*Querquedula crecca*)
SHOVELLER (*Spathelea clypeata*)

DEPARTURES.

WINDOW SWALLOW (*Hirundo urbica*)
BANK SWALLOW (*Hirundo rufaria*)
FLY CATCHER (*Muscipula grisola*)
RED START (*Sylvia phainopeplus*)
HOBBY (*Falco subbuteo*)
HAWK OWL (*Otus brachyotus*)
SANDPIPER (*Totalus hypoleucus*)
REDSHANK (*Totalus calidris*)
 Sea Gulls and Petrels seek the shores.

A sunshiny day will frequently elicit an elegiac melody from the Black-bird, Sky Lark, and Wood Lark; and on mild mornings, the Ring Dove coos. The Tawney Owl hoots during the night.

These, with many of those enumerated last month continue to arrive from northern countries.

Depart to the more hospitable regions of the south.

INSECTS.

The floral season is now over, and its gay family, the butterflies and moths, after depositing their eggs upon such plants, and in such situations as are suited to the wants and circumstances of their progeny, depart together. One common grave encloses both. A few stragglers, however, are still to be met with in favourable situations, of which the following is a list:—

- PEACOCK BUTTERFLY (*Vanessa Io*).
- RED ADMIRAL B. (*Vanessa Atalanta*).
- SMALL COPPER B. (*Lycena Phlaeas*).
- LARGE CABBAGE BUTTERFLY (*Pontia Brassica*).
- PAINTED LADY B. (*Cynthia Cardui*).

Beetles are still abundant, being of a more hardy nature they endure the cold and wet better than their more fragile brethren. Many of them are now busy in digging their winter quarters. Spiders hang languidly from a few slovenly webs,—a benumbing presentiment of death seems to steal gradually upon them as the numerous fly families perish.

Bee-hives are now heavy with honey, and the usual mode of obtaining it is by holding the hive over burning sulphur, when the poor bees are suffocated, and the combs cut and emptied at leisure. This is usually performed in the present month. London very sensibly remarks of the destruction of the bee by suffocation, that "such a death seems one of the easiest, both to the insects themselves and to human feelings. Indeed the mere deprivation of life in animals, not endowed with sentiment or reflection, is reduced to the precise pain of the moment, without reference to the past or the future; and as each pulsation of this pain increases in effect on the one hand; so on the other, the susceptibility of feeling it diminishes. Civilized man is the only animal to whom death has terrors, and hence the origin of that false humanity which condemns the killing of bees in order to obtain their honey; but which might, with as much justice, be applied to the destruction of almost any other animal used in domestic economy."

BOTANY.

Fled is the blasted verdure of the fields;
 And, shrunk into their beds, the flowery race
 Their sunny robes resign. Ev'n what remain'd
 Of stronger fruits falls from the naked tree;
 And woods, fields, gardens, orchards, all around
 The desolated prospect thrills the soul.—THOMSON.

This is rather more poetical than true: desolation is a term which never properly describes any aspect of nature:—a city may be desolate; but a field, a wood, or even a sandy wilderness, NEVER. Things are so ordained, that in this world every season, every place, is redolent of life. Life, while time lasts, is inextinguishable—it may change residences, but it never departs. Although the verdure of the summer fields may have perished, and the falling "leaf incessant rustle from the mournful grove," yet the old earth is not left naked; he is simply changing his vesture and putting on a winter robe, which, if less showy, is not less beautiful than his summer garments. As the sun departs, the cryptogamic races gradually put forth their microscopic wonders; the lovely exhibition is just now commencing: mosses, lichens, liverworts and fungi, in innumerable millions, every where salute the enraptured eye, and offer more wisdom to the meditations of those who "studious walk," than perhaps even an everlasting winter could, in connection with our finite perceptions, fully exhaust.

FALL OF THE LEAF.

October has been called the "Shedding Month," in allusion to the general fall of the leaf which now takes place. This event, however, is not strictly confined to the present time, and does not happen at the same period in all vegetables. In general, the trees whose leaves are the earliest expanded are also the first to shed them; as in the case of the lime-tree and the horse chesnut, which commence their fall in September. But nature,

scorning to be bound in finite reins, oversets our classification; and we find even to this simple rule many exceptions: thus, the leaves of the elder appear very early, but are late in falling. Other trees present peculiarities equally averse to scientific trammels: the common ash does not leaf till the spring has far advanced, but falls at the end of summer; and the mulberry-tree, in the same manner, is the last tree which comes into foliage, and the first which parts with it. It was on this account called by the ancients the wisest of trees, deeming it folly to be active in un-congenial circumstances. But such a doctrine never made Praxiteles a sculptor, or Demosthenes, in spite of his stammering, the first orator of his own or any other age. Leaves which have foot stalks fall sooner than those which have none; and, for a similar reason, those leaves which embrace the stem endure longer than either. The leaves of herbs generally die with the stem, without being separated from it.

Many trees are always adorned with foliage, called in popular language evergreens. These are generally resinous plants, as pines, firs, junipers, &c. &c., or vegetables with stiff, leathery leaves, as myrtles, laurels, &c. &c. These leaves fall in the summer, after the new ones are produced.

Cold is not to be considered as the principal cause of the fall of the leaf. It results chiefly from a suspension of vegetation, and the want of nourishment which follows. As soon as the supply of sap becomes scanty, the vessels of the leaf shrink, and the surface changes colour. When the supply totally ceases, the sap tubes of the leaf stalk shrivel together, the junction between it and the stem severs, and the leaf falls.

ACORNS AND BEECH MAST.

The wintry winds begin to exert their long-dormant energies among the forest boughs, and every fitful blast is followed by showers of forest fruits. Acorns, beech mast, chestnuts, &c. &c., fall this month in great abundance. In our large forests, such as Epping and the New Forest, large herds of pigs are now driven under the care of swineherds, to feed upon them. This continues till about the middle of November when they become exceedingly fat.

VEGETABLE GALLS.

As the hedges become clear of leaves, the passing traveller is frequently puzzled with certain nest-like excrescences, which appear growing upon the wild-rose bushes. These are occasioned by the sting of the ichneumon fly, which pierces the stem for the deposition of its eggs; this is followed by an extraordinary growth of vegetable matter, in which the eggs are hatched, and upon which the young maggots feed. Such excrescences are called galls, and the one noticed, the "bedegaur" of the rose. There are many varieties, peculiar to the oak, willow, hawthorn, &c., which we shall notice in their proper seasons. We trust that our juvenile readers will be on the look-out for them.

WILD FLOWERS

Flowers now become very scarce, but a few still remind us of departed joys, and speak inviting introductions to their winter brethren. Fanny, Black Nonesuch, Hawk-weeds, Honeysuckles, Woad, Woodbines, Bugloss, Gentians, Harebells, Stichworts, &c. may be found in sheltered situations. But the following are worthy of especial attention, because the whole phenomena of reproduction may be studied at the same time: flowers and fruits in every stage of development hanging together from the branches.

Briar (*Rosa Canina*).

Marsh Elder (*Viburnum opulus*).

Black Bryony (*Tamus communis*).

Elder (*Sambucus nigra*).

Black Alder (*Rhamnus frangula*).

Woody Nightshade (*Solanum dulcamara*).

Holly (*Ilex aquifolium*).

Barberry (*Berberis vulgaris*).

Black Thorn (*Prunus spinosa*).

Privet (*Ligustrum vulgare*).

FUNGSSES.

The fallen-leaves, moistened by rain, and heated by the last beams of an autumnal sun, have covered the woodlands with a putrescent carpet; and had not God contrived some means of averting the evil, a vile effluvia would steam from their umbrous labyrinths, and poison half the world. But not so—"The earth is full of the goodness of the Lord," and a grand array of chemical apparatus adorns our forest walks—the mushrooms, the toadstool, and others of a similar nature, destined to thrive upon pollution, spring up in myriads, and by an unknown chemistry elaborate the widely spread corruption into forms of living beauty, and after a faithful discharge of their sweetening influences, offer their decaying bodies to the keen appetite of thousands of maggots, who in their turn, are resolved by various modes into other forms of life.

The fungi, as physicians of the world, commend themselves to our best meditation;—gratitude demands that we should acknowledge their benefactions by a close acquaintance. They fringe the glorious robe in which the creating God conceals his essence; and could we only prevail upon ourselves to give up our haughty dislike to stooping, and often touch the hem of that rich garment, we should find ourselves wiser and better for the contact.

Theophrastus, Dioscorides, Pliny, and other ancient naturalists, ignorantly conjectured that the mushroom tribe originated by what is called "spontaneous generation," or, in plainer words, that they sprung up, they did not know how, from a certain sliminess arising from putrifying vegetables. This "sliminess" continued to be the prolific father of numerous well defined families, till in 1600, Clusius, a French botanist, had the good sense to question the fruitfulness of old father SLIME, and boldly to demonstrate that mushrooms were properly plants, and that like them, they bore seeds, and were reproduced from them. Harvey, the discoverer of the circulation of the blood, followed the same doctrine into a wider field, which ended in his proving that every living thing, whether plant or animal, must have originated from an egg. Boccone, Mentzel, and Tournefort contributed many explications of the same truths, and Battarra, Michelii, Dillenius, Gleditsch, Linnaeus, Hedwig, Bulliard, and Persoon, added successive stores to the already established fact, till, in our own times, Bolton, Sowerby, Turner, Hooker, and Greville, have, by their nice labours, and delicate delineations, given the subject all the charms of ocular demonstration.

These preliminaries will prepare us to look at the mucor of a shrivelled apple, the smut upon a blighted corn straw, or the great toadstool of the woods, in the lights of truth and nature. We have only to let the eye, instead of the fancy, govern the mind, and facts become easily developed. Under such guidance we trust the following history of the tribe has been written.

Fungusses propagate themselves by seeds in the same way as other vegetables. In many species the seeds are visible, but in others they are so minute, that their existence is only to be inferred from analogy. Many spring from the ground, but the majority are parasitical—growing from organized bodies. In substance they are as variable as their figures, every species having its own peculiar consistence: some are hard and tough, others are tender, and jelly-like; the former, perennial, and the latter short-lived, disposed to putrefaction, even in some cases reaching maturity and dissolving in the course of a few hours. Their forms are diversified beyond what an inexperienced person would suppose possible in such simple beings. Some consist only of a single filament, others are compounded, many are simple globules. Their differences increase as their organization becomes more complex:—thus in the Agarics, Boleti, and others, the Pileus, or cap, stands upon a stalk, or rests destitute of a stem upon the surface from which it grows. In form, the cap is either spherical, irregular, conical, flat, curled, split, &c. &c., and many, like those of the Auricularia genus, are of a half-circular form, in which cases, the point of attachment lies in the flat side. This shape fits them for growing on the stems of trees, which they embellish in a very agreeable manner. The colours of the various species are as different as their forms, some are of a full yellow or crimson, while others exhibit hues, of red, blue, and yellow, in their most delicate combinations. The eye of the passing traveller is frequently arrested by these real beauties—"very pretty"—escapes his lips and he passes on, like the majority of the world, none the wiser for his vision; "he has eyes but sees not"—the better part of wisdom lies in really keeping

our eyes open. Three-fourths of the human race are immersed in perpetual slumber.

The economic uses of fungi are few, but increasing. They are mostly of a poisonous nature, and, unlike other vegetables, their poison cannot be separated by boiling or distillation. Nevertheless the universal appetite for condiments, has led to the discovery of many harmless and savory species. The Romans held them in great esteem; and this is still seen in their descendants, the Italians, who torture them into hundreds of different flavours, colours, and consistencies. The Germans use them in great quantities; and the Russians are so passionately fond of them, and have discovered so many ways of rearing them, that there is scarcely a house throughout their vast regions, in which they are not constantly eaten. British spicemen, led by the sagacity of a Ude and a Kitchener, have also contrived to add to our gastric stimulants, a savory list of flavours from these humble fleshes we corrupt.

We shall now proceed to enumerate the alimentary and other uses of the most common species, together with a few particulars of the history.

COMMON EDIBLE OR FIELD MUSHROOM (*Agaricus Campestris*). This species varies greatly in size and quality, according to soil and temperature. The average diameter is about six inches, though some have been gathered thirty inches in circumference, and weighing upwards of one pound. They grow in the greatest abundance and perfection upon rich sloping pastures. Gardeners propagate them by sowing the mould-like substance which proceeds from the stems of the old plants, and which is called "spawn;" or by simply sprinkling a bed of light and well manured earth, with the water in which a quantity of full grown plants have been washed. By this process the water becomes saturated with their impenetrable seeds. Field plants are more tender and savoury than those artificially produced.

These mushrooms are largely used for the preparation of catsup; for which purpose, after salting, their juices are expressed, and boiled with spices. They are also used to flavour ragouts, and to season a variety of rich dishes. Frequently they are eaten alone, when the cap or "button" is roasted with butter or gravies.

CHAMPIGNON (*Agaricus pratensis*).—is much eaten on the continent, but it closely resembles several poisonous species, and when it grows in wet situations, is itself highly deleterious, and should therefore be carefully identified, and used with caution. Indeed this remark applies to the whole family.

SAFFRON JUICED AGARIC (*Agaricus deliciosus*).—This mushroom, as its name implies, possesses very luscious qualities, and is said when well dressed to be "full of rich gravy." It grows sparingly in dry woods, but very abundantly in France and Italy, where it is greatly esteemed and sold in considerable quantities. Sir J. E. Smith observed a prodigious supply of them in the Marseilles markets. The Romans considered it to be a great luxury, and it was so much esteemed by Claudio Cesar, that his wife Agrippina, taking advantage of the circumstance, made it a vehicle for administering poison to him.

CINNAMON AGARIC (*Agaricus cinnamoneus*).—A handsome red-gilled plant, but very rare;—said to be edible, and to have a fine flavour when broiled.

COW BOLETUS (*Boletus Bovinus*).—This is a thick clumsy plant, of a brown colour, and grows plentifully in warm pastures and plantations. Cows, deer, sheep, and swine feed upon it, and it is said they are "greatly disordered" by it, but we doubt the assertion. Animals never feed willingly upon hurtful substance, except in small portions for medicinal purposes;—God having endowed their senses with a power of enjoying only those things that are beneficial to them, they could as soon square the circle, as eat, like man, to their own injury or destruction. A variety of this species is eaten in Italy, and prized as a valuable delicacy. The Germans also profess to like it. Another variety is used by the Poles and Russians, who gratify their sophisticated palates by tormenting the natural flavour of the plant with numerous spicings, bodings, and boilings.

ANNULAR YELLOW BOLETUS (*Boletus Luteolus*).—Veal and cocoa-nuts possess well known, and easily purchased flavours, but as if that was not sufficient, this and some other species are brought with much artful and expensive dressings to resemble them—the shadow takes place of the substance, and—"Dear me,

how like ver! to be sure," resounds from the tables of the tasteless epicure. "We wonder how our blotting-paper would eat, well peppered, spiced, gravied, stewed," &c. &c.

TILED HYDNUM (*Hydnellum imbricatum*).—Luxury ruined the Romans, and it is curious to observe how deeply the ancient manners are rooted in their enervated descendants. With an abundance of wholesome and luscious food, the modern Italian, and all those who ape his false desires, may be said to starve. He is perpetually hungry, and has a stomach one would suppose fit to digest old hats, for the Tiled hydnum, a leathery, indigestible fungus, is written down as "an article of food in Italy." We have heard of the hyena eating his own legs, and we kindly recommend the example to their serious attention.

YELLOW HYDNUM (*Hydnellum repandum*).—Regularly sold in Austria, France, and Switzerland. Broiled with fresh butter! rounds of bread!!! pepper!!! salt!!! and savoury herbs!!!! it is said to have a fine flavor. We guess the flavour would be equally good without the Hydnum at all.

HALVERA.—This is the name of a genus, all the species of which are reckoned wholesome and excellent. They are extensively sold on the timidous continent, and are fancied to resemble the Morelle—but fancies are not always facts.

MORELLE (*Phallus excelsior*).—The Morelle is really a delicacy, and has for ages been used to season ragouts, stews, and soups. Sometimes it is used alone, stuffed with herbs and crumbs of bread. It differs greatly in form from the common edible mushroom, having instead of a flat cap, a hollow spherical head, covered on the outside with irregular network ridges, standing on a smooth strong stem, together about five inches high, and of a yellow colour. It is a native of Britain, and grows in damp woody situations. "In Germany they are so saleable, that some country people having observed that they spring up most abundantly where wood had been charred, ventured to set fire to the forest, purposely to increase their propagation, till such practices were suppressed by heavy penalties." The Morelle is never cultivated.

CORAL CLAVARIA (*Clavaria Corallina*).—This is commonly used in France and Italy as a condiment with fricassee soups and other delicacies, and is commonly to be found in heaths, woods and pastures. It is worth seeking, on account of its form, which closely resembles that of a branching coral.

WHITE AND BLACK TRUFFLES (*Tuber album, et cibarium*). Truffles are considered to be the best of the esculent fungi. In form and habit they differ in many remarkable particulars from any of the preceding genera. They are of an irregular shape, something like a large potatoe; solid, without any perceptible root, rough and warty on the surface, and growing in clusters four or five inches beneath the surface of the ground. In Italy they are frequently found of several pounds weight; but with us, seldom more than four ounces. They are used in different foreign soups, or eaten roasted like potatoes, or dried and sliced as ragouts. In the London Markets they fetch considerable prices, but are not cultivated like mushrooms, growing chiefly on the downs of Wiltshire, Hampshire, and Kent, and in airy plantations.

Growing beneath the surface of the earth, the difficulty of discovering them is so great, that dogs previously habituated to their scent, are taught to hunt them. When a bed of them is found, the dogs give notice of the treasure by barking and scratching up the ground. Pigs also are trained in Italy to root them up, when an attendant, after rewarding the faithful grunters, collects the remainder. The Romans were so fond of Truffles, that they imported them from Africa; and the Athenians are said to have bestowed the honours of citizenship upon a family of slaves, for having discovered a delicious mode of dressing them.

These notices will conclude our account of the esculent fungi, in which not above half a dozen, out of about thirteen hundred species which grow in Britain, are of any use as alimentary substances; and these are so liable to be mistaken for poisonous species, and are at all times so indigestible, that they hardly repay the trouble and risk of consumption. Their proper uses in creation are as disinfecting agents: and beyond this, their lurid aspect forbids the ingenuity of the cook, or the cravings of the epicure.

We proceed to state a few of their more natural applications to the wants of man.

TINDER.—The Touch-Wood BOLETUS (*Boletus ignarius*) and the TINDER BOLETUS (*Boletus fomentarius*) are used for the manufacture of what is called "German Tinder." For this purpose, they are boiled in a strong lye, dried, and boiled again in a solution of saltpetre. The SULPHUR COLOURED BOLETUS (*Boletus sulphureus*) is also frequently pulverised and used as tinder.

SPIRITUOUS DRINKS.—Many inebriating potations are prepared from fungusses, but more especially from the FLY AGARIC (*Agaricus muscarius*). The Russians, Kamchadales, and other inhabitants of the frigid regions of Northern Asia, delight to "steal away their brains" with its narcotic juices. It is a native of Britain,

and grows plentifully in cold woods. Few species present a more brilliant appearance in the shady underwood—of a fiery crimson, it seems to blush for its vagrant lord—for the man, King, peasant, or whoever he may be, who would dare to poison his immortal mind.—We return to our wretched detail.—This fungus is taken in the form of a holus; but more usually it is steeped in the expressed juice of the berries of *Vaccinium uliginosum*, when it stupifies with all the fatal speed of strong wine. Under its first influence, the poor fool who drinks becomes as sadly comical as a Christmas clown: if he wishes to step over a straw, he takes a stride or a jump sufficient to clear the trunk of a tree; a talkative



GROUP OF FUNGUSES.

person cannot keep secrets or silence, and one fond of music is perpetually singing; thus he flounders on from one absurdity to another, till outraged nature sinks into a stupor of unconsciousness, or, more awful, bursts into spasmodic agony:—the burning stomach heaves forth the cursed potion, and it is well if the life go not with it.

DRUGS.—Fungi contain two elementary substances, which are peculiar to them, *Fungin* and *Bolete acid*; the former contains the elementary, and the latter the poisonous portions. *Fungin* is tasteless, soft and colourless; smells like bread in burning, and produces, by distillation, "water, a brown oil, ammonia, and charcoal." *Bolete acid* "crystallizes in regular white prisms, does not alter when exposed to air, is soluble in forty-five times its weight of alcohol, or in one hundred and eighty times its weight of water at the temperature of sixty-eight degrees, and tastes like cream of tartar."

Some species have, of themselves, yielded crystals of oxalic acid, and others are believed to produce prussic acid. All, as we have said, are more or less poisonous; and, in the more virulent species, advantage has been taken to use them for the destruction of vermin. As, for example, the fly Agaric yields an expressed juice, which, rubbed on walls and bedsteads, destroys bugs, or mixed with milk, poisons flies; and the touchwood, Boletus, is burnt in the huts of the Laplanders to kill, by its fumes, the gad-fly of the reindeer. The fumes also of the common variable puff-ball (*Lycoperdon proletus*) when burnt have a narcotic power, which has been used to stupefy, instead of killing bees, when robbing the hive of its honey.

ARTISTS' COLOURS.—Most of the puff-balls (*Lycoperdon*) contain black and brown powders, which have only to be mixed with a little gum-water to become immediately fit for the pallet. This is also the case with many of the Mushroom or Agaric family,

whose gills, when they reach maturity, are full of coloured powders, similarly fitted for the painter. Mr. Sowerby has coloured several of the plates in his "English Fungi" with these powders. Some of the species which, in decay, dissolve into fluids, also afford colouring materials; thus the Deliquescent Cylindrical Agaric (*A. Cylindricus*), after the dispersion of its seeds, melts into an inky fluid, which, when it is boiled, with a little spice to prevent mouldiness, and filtered, makes a capital brown colour for tinting.

MISCELLANEOUS USES.—Sudorific preparations are made from fungi, which, by blunting nervous perceptions, soothe pain and induce sleep. A few species have been used in place of "lint," to stop arterial bleedings; and in Anconia slices of the inner part of the touchwood Boletus (*B. ignarius*), beaten to the consistence of leather, are patched together, and form very tough garments.

MISCELLANEA.

NUMEROUS fishes spawn near the sources of rivers. Field-mice prepare their winter habitations. Shakes return to their holes. Amphibious animals fall into that stupor which precedes torpidity. Rooks repair their nests, and "play strange fantastic tricks before high Heaven." Wildgeese wander from the fens into corn-lands. Swallows, too young to follow their parents, become torpid; are found in that state, and the grand fact of migration is declared to be false. Robins and Tits become cottage visitants. And man, immersed in himself, sits in the midst of all these interesting vicissitudes as little aware of them as he is sensible of the diurnal revolution of the earth.

THE
GU TO KNOWLEDGE.

EDITED BY MR. W. PINNOCK,

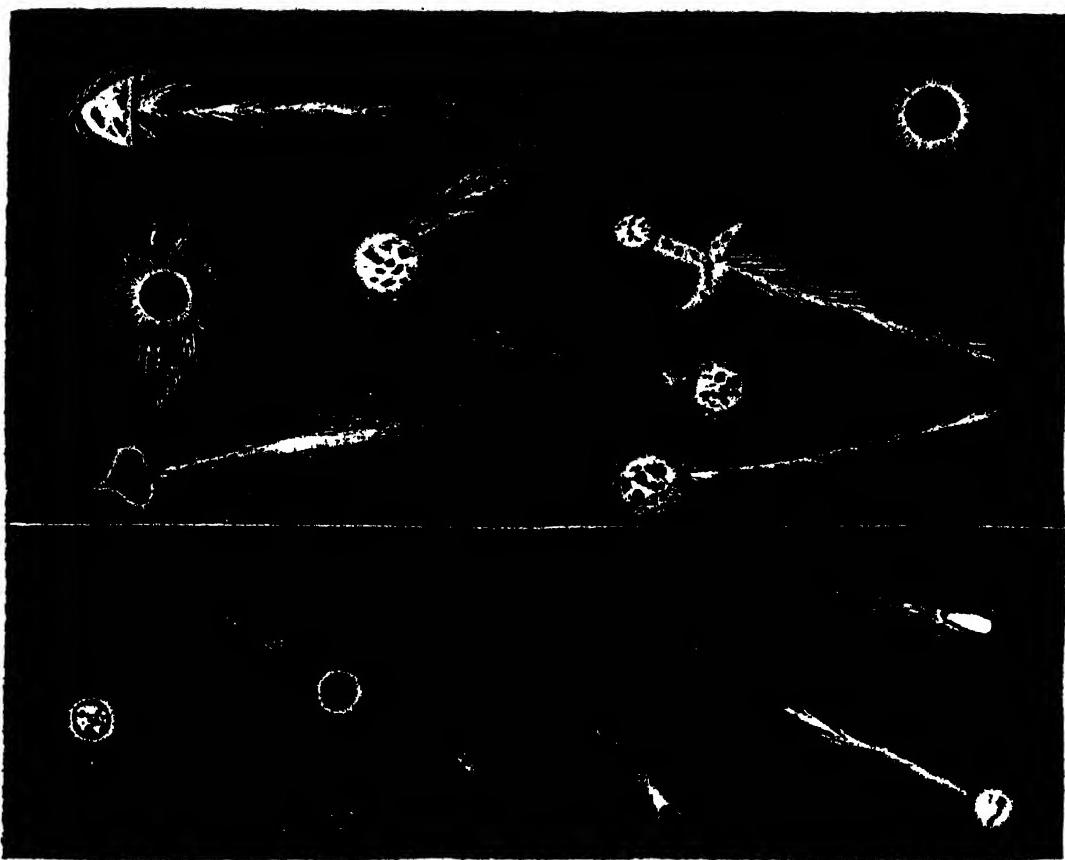
AUTHOR OF "PINNOCK'S CATECHISMS," "GRAMMAR OF GEOGRAPHY AND HISTORY," ETC. ETC.

No. XVIII.]

SATURDAY, OCTOBER 6, 1832.

PRICE
ONE PENNY.

OF COMETS GENERALLY, AND OF THAT NOW APPEARING.



The figures above the white line represent the appearance of those Comets described by ancient authors; and those below the line, such as have appeared in later times, and whose authenticity may be depended on.

AMONGST the inestimable advantages attendant on the increase and wide diffusion of KNOWLEDGE throughout the civilized world, that of having obtained a better acquaintance with the nature and influence of Comets ranks high. It is true we are, as yet, but imperfectly informed of their short stay within mortal ken;* and the long intervals between the disappearance and return of some of them, preclude the possibility of taking such satisfactory observations as the other planetary bodies† afforded us an opportunity of doing. Yet enough has been done to dissipate the unfounded apprehensions and panic terrors which their appearance once caused, and to enable us to calculate with tolerable certainty the

periods of their return; no longer do men attempt by costly sacrifices, by splendid processions, by prayers and penances, to avert the divine vengeance, of which the Comet was supposed to be the unerring harbinger. Too much is to be feared, that the opposite vice of apathy, or the indifference to the wonders displayed by the Great CREATOR, has taken the place of apprehension and fear, thus plainly proving, that the devotion of mankind in general, is influenced rather by dread of danger than by love and gratitude.

Yet, even in this age of information and partial indifference there are some men, who attempt to rouse the reign of terror; and though they do not pretend to consider COMETS as precursors*

* View, for the distance with which a person can see an object.

† Though not classed among the planets, COMETS may be very properly denominated planetary, as the term signifies moving, wandering.

of famine, plague, pestilence, and bloody wars, yet endeavour to impress upon them a more formidable character by affirming that by the agency of a COMET, this EARTH is destined to be destroyed. They tell us that some one of these bodies, in its revolution round the SUN, will come in contact with our planet, and either dash it to atoms, or burn it up in one general conflagration.

Surely such absurd prognosticators of evil can never have contemplated the exquisite harmony of the universe, can never have observed the unerring regularity of the motions of the heavenly bodies, so that the different phenomena they present can with certainty be foretold, and their positions accurately pointed out at any given time, however remote.* As well may we expect a collision or clashing together of JUPITER, SATURN, or any other of the Planets which move in orbits nearly circular, as in concert with our earth, because it moves in an elliptical or oval orbit. The Great Ommiscient* has, no doubt, so regulated the motions, and situations of these orbs, as to afford them an uninterrupted course through the regions of space; and allotted to them the position, which they are to contribute to the general good, in common with their less eccentric companions†:

Respecting the nature of Cometary Bodies, a thousand wild theories have been invented which are now passed, as they deserve, into the gulf of oblivion. The simplest and most rational, as it accords admirably with the observations made by HEINSCHER on the Comet of 1811, is, that the Comet is a globular opaque body, like a planet, but as, from the eccentricity of its orbit, it sometimes approaches very near the SUN, and at others, departs to an immense distance from it, it is rendered independent of that luminary by being furnished with a phosphoric atmosphere, capable of supplying light and genial heat to itself, and so constituted as not to have that light and heat materially augmented on its nearest approach to, or diminished on its furthest departure from, the SUN. That the Comet is not indebted for its brilliancy to the light of the SUN is evident from the circumstance observed by HEINSCHER in 1811, that *the disk* of their celestial visitant was round, well defined, and equally bright; though, from its position as it respected the earth, it could not have been thus illuminated by the rays of the *Orb of Day*.

By dint of frequent observations, and of the most subtle reasoning, and accurate calculation, Astronomers have been enabled to discover the periodical times of several Comets, and consequently to point out when they may be expected to return. They have ascertained that Comets move in parabolic curves, and describe equal areas in equal times. If then, the length of the transverse* and conjugate diameters of the ellipse, in which any Comet moves, be calculated from certain data well-known to ASTROLOGERS, and the velocity of it ascertained, it is easy to find the period of its rotation in its orbit, subject to some little uncertainty from planetary attraction.

We have been led into this familiar disquisition on Comets, in consequence of the expectation which prevails that one will cross the Earth's orbit, Oct. 29th.

The periodical revolution of this Comet has been calculated at

rather less than seven years; and to allay the fears of those, who apprehend mischief from its approach, we would assure them, that its least distance from the EARTH, during this revolution, will be *sixty millions* of miles; a space too vast, to allow any reasonable expectation of injury to accrue from it.

Whilst it was supposed that COMETS, from the eccentricity of their orbits, and consequently, their alternate approach to, and immensely distant departure from, the SUN, were exposed to the extremes of heat and cold, men were at a loss to conjecture for what purpose they were created. But if we adopt the theory which is daily becoming more prevalent, that the SUN itself is a habitable globe, furnished with a luminous atmosphere, which affords no heat till mingled with the atmosphere of a Planet, we shall be at no loss to conceive how it is possible for Comets to be furnished with an atmosphere similar to that of the SUN, so as to render them as we have already hinted, independent of it, as it respects light and heat. This being granted, the possibility and even probability of their serving as the abodes of rational and irrational animals, and their producing every necessary for support and comfort of such animals, as abundantly as though moved in circular orbits, and derived their light and heat from the SUN, is very apparent, and serves to confirm the acknowledged truth, that "God has made nothing in vain."

An idea is generally prevalent, that the periodical return of Comets are, without exception, at very long intervals: Sir Isaac Newton estimated one at 575 years. But it is now known to philosophers, that some of them are much shorter than those of URANUS, SATURN, or even JUPITER. The revolution round the SUN of the Comet seen in 1770, is performed in five and a half years, and that of 1818 in only 1200 days. That which is expected shortly to make its appearance, performs its revolution in six and three-quarter years.

The following observations on this luminary are extracted from the *Norwich Mercury*:

"The Comet which is now moving direct and quicker than the earth, will become nearly stationary in the middle of October. On the 27th of November, the Earth and the Comet will be barely sixty degrees asunder, and the latter may be expected to be visible to the naked eye; nearly the whole of the autumnal quarter. The places of its nodes appear to vary considerably; as its right ascension and declination with latitude, seems to agree in about twenty-one degrees of Cancer, while its ascending node was in eight degrees of Sagittarius; having a considerable declination north, the greater part of the limb of its visible appearance, it will be very much longer above the horizon than beneath it. The rising, southing, and setting, on the 22d of October, it is expected, will not greatly differ from the following calculation.

"Right ascension of the Comet 7 h. 22 min. Ditto of the Sun 13 h. 49 min. Comet south 17 h. 33 min. Semidiurnal arc for lat. 52°, and declination 26,—north 8 h. 40 min. Comet sets 26 h. 13 min. The same are deducting from the southing 8 h. 50 min. for its rising. These are calculated from noon apparent time. The following is clock time, allowing a little for the different time of day in the calculation of the Right Ascensions. Rises N.E. 9 min. past 9 in the evening, south 33 min. past 5 in the morning, sets north-west 13 min. past 2 afternoon."

* *Omniscient*, knowing every thing.

† *Compeer*, an equal in rank. An associate or companion.

‡ Called its *perihelion*.

§ Denominated its *aphelion*.

|| Piercing, acute.

¶ (A term in geometry) having the form or properties of a parabola, —a conic section arising from a cone's being cut by a plane parallel to one of its sides.

** *Transverse*, a cross direction.

The virtues of a mother give virtue to her children; the virtues of a father give only fame.

Riches take away more happiness than they bestow, but one must have a soul to feel this.

COSMOLOGICA;
OR, OBSERVATIONS ON NATURE AND THE
UNIVERSE.—No. I.

It may be imagined, that in treating upon this exhaustless subject, we should begin with some of the inferior objects of nature, and conclude with what we have ventured to commence; but our fear lest there should be any, even at this day, who openly or tacitly deny the existence of a Deity, induces us to offer some remarks upon that head, and we hope to convince the faithless of so injurious an error as that which challenges the CREATOR of the UNIVERSE.

One great cause of *Atheism** is the crude and mysterious manner in which *Theologians*† have commonly attempted to explain the being and attributes of that spiritual essence which pervades and invests all things visible, and invisible; they have represented this uncreated power more as a form in substance and locality, than as it really is, unformed, self-existent, without beginning, without end, every where, and in all things; and, not unfrequently, while the pulpit has denounced vengeance against vice, men have unfortunately pourtrayed in their imaginations that idea of a vindictive Judge. Faithless men say, “Where is God’s throne?‡ Where is hell?” These are the perplexities of the Pagans. They cannot understand that which is not apparent to the human senses, and therefore dimly apprehending a being unseen, they make themselves Gods, or worship the Celestial Orbs, or the Elements of Nature; “Heaven is within you,” says the sacred Scripture. *Superus*, and *Inferus*, are but the high and low of the human soul; and God’s throne is the heart of man; Heaven and Hell are here and every where; virtue and piety, righteousness and peace, are the principles and portion of the wise and good; outrage, wickedness, and misery, the principles and portion of the foolish and bad: it is this distinction alone, which now, and hereafter, does and will constitute these opposite conditions.

The hieroglyphical, and allegorical manner, in which the oriental writers expressed themselves, has also greatly mystified this subject, and seems to have been the source of that superstitious custom practised in Catholic countries, of kneeling before imaginary representations of things invisible. When the Roman Emperor CONSTANTINE undertook his expedition against *Byzantium*, he pretended a vision, alleging that he had seen in the sky a sign of the cross, which he caused to be represented upon the standards of his army, and thereby allured the Christians to enlist themselves under his banners, thus mixing the symbols of *Heathenism* and *Christianity* together, and making religion a *stalking-horse* for the purposes of temporal conquest and aggrandizement; a scheme that has been followed by a warrior of modern times.§ Examples of this kind have tended to distract the notions of men, just emerging from the obscurity of ignorance; they have seen by a little light

the defects and absurdities of ceremonial and ecclesiastical establishments; and from this *exparte* evidence, they have injudiciously denounced all ideas of a Deity as wholly fictitious; but let us ask one of these precipitate judges, what conclusion he would make, supposing that for the first time in his life, a machine, such as a steam-engine, a clock, or a watch was presented to his observation? would he not immediately see the ingenuity of the invention, and be convinced that there must have been an inventor and a maker? and then let us open to his view the visible works of *God*; the productions of nature, the order, regularity, and motions of the heavenly bodies, and ask him if he does not recognize the wisdom and power of *CREATOR*? These objects we shall expose and explain in due course, through the medium of the “Glosses to Knowledge,” which I hope will be a supplement to this volume; and having pursued the quality,† *Omniscience*, and *Omnipotence*‡ of the deity, we will proceed to explain what is to be understood by the term “Universe,” or what it principally contains, and then examine separately those constituent parts.

VINEGAR.

The name of *Vinegar* is derived from two French words *Vin*, wine, and *aiigre* sour. France being a wine country, vinegar there really is made from wine, by allowing it to be exposed to heat and air until it becomes sour. But in this country vinegar is much more frequently made from weak beer; wine being far too costly here to be spared for such a purpose.

Vinegar is sharp and acid, prevents both animal and vegetable substances from decaying, and possesses several valuable medicinal qualities. The best vinegar is of a lightish orange-brown colour; but that which is made from beer is much darker.

Of late years a method has been put in practice of obtaining vinegar from wood. Vinegar so obtained is called pyrolycous acid, and is much used for medicinal purposes.

Taken with food, vinegar allays thirst, cools the body, and promotes perspiration.

OF THE NATIVE AMERICANS.

The native inhabitants of AMERICA differ as much from the EUROPEAN FAMILY in manners and morals, as in colour.

Their colour, or complexion, greatly resembles the hue of unburnished copper; hence, they are usually called red men.

The copper-coloured, or RED MEN, comprehend all the native inhabitants of America, except the *Esquimaux* and *Greenlanders*, who belong to the SAMOIDE FAMILY.

The hair of the native AMERICANS is as remarkably strong and straight as that of the negroes is soft and curly; and their beards are naturally very scanty.

Their eyes are small and deep-seated, their cheek-bones remarkably prominent, their noses flat, and their foreheads remarkably low and retreating.

What we consider deformities, and what geometrical proportions, and moral results prove to be so, these untutored people cherish as beauties; and they actually employ art to heighten their natural deficiencies.

Thus, immediately on the birth of an infant, its head and nose

* *Atheism*, the opinion of those who deny the existence of a God, the governor and preserver of the world.

† *Theologian*, a professor of divinity; one who teaches the knowledge of God and divine things.

‡ *Hiero*, a tyrant king of Sicily, demanded of *Simonides* “what God was?” Simonides requested a day to deliberate; the next day he required two; then four; thus doubling the number; observing, that the more he studied, the more incomprehensible he found the subject.

§ *BONAPARTE*, who was a *Papist* at ROME; a *Free Thinker* at PARIS; a *Mussulman* at CAIRO. Constantine was the first Christian Emperor of Rome; he removed the Court to Byzantium, the capital of Thrace; and called that city, Constantinople, and the whole province Romania; he reigned 30 years, about 306 years after the birth of Christ. Constantinople was taken from the Christians by MAHOMET the 2nd, A.D. 1453.

It is now the capital of the Ottoman or Turkish Empire. It stands on the shore of the Dardanelles, near the Black Sea.

* That which is put to serve in place of something else.

† Ubiquity, omnipresent; present every where.

‡ Omiscience, the knowledge of all things.

§ Omnipotence, Almighty power.

are bound in such a manner as to cause the helpless being great pain, scarcely to be borne, in order that the forehead may grow the lower and more flattened, and that the latter may become still more clumsily short and broad than nature has formed it. As few of these people possess an equal stature with the Europeans, they are decidedly their inferiors, both in muscular strength and mental development; and though they are singularly patient in enduring torments, they are any thing but courageous in courting and facing dangers.



INTERVIEW BETWEEN THE AMERICAN INDIANS AND THEIR SPANISH DISCOVERERS.

Their whole art of war consists of stratagems for surprising their enemies, and in cunning ingenuity in baffling similar designs.

They dread danger; but, when escape is utterly hopeless, there are in their conduct a desperate calmness and insulting intrepidity, of which EUROPEANS are utterly incapable.

It seems probable, that both their want of active courage, and their possession of passive intrepidity, which latter amounts to an apparent insensibility of suffering, arise from one and the same cause; namely, their scanty cerebral development.

Men of lively imaginations have always larger brains than those of a duller habit, and the former are far more impatient under bodily suffering than the latter.

We may infer from this, that the AMERICANS, who have a cerebral development greatly inferior to that of EUROPEANS, are, on that account, less sensible of pain than they; and we may, consequently, impute their want of active courage to their want of intellect, and their stoical indifference, under the torture of their enemies—torture so severe that it would madden a European even to contemplate its infliction—to a consequent callousness of nerve.

Though utterly incapable of mental exertion, except such as their animal wants give rise to, they have usually a grave and solemn,

countenance and manner; except when excited by the war-whoop of their friends, or by the indifference of their savage enemies.

Their vices are as many as their uncivilized pauperism permits them to indulge; their virtues are few, and principally exemplified in their domestic conduct.

To strangers they are hospitable, but easily excited to anger; and to him with whom they once become angry, they are bitter, brutal, and implacable enemies.

ON THE VARIATIONS IN THE WEATHER.

THERE is scarcely any one subject upon which mankind display more shortsightedness and inconsistency than they do upon the weather. When exceedingly fine and pleasant weather cheers us, and makes all things around us seem doubly beautiful, we are almost sure to exclaim that we wish such weather could last for ever!

In exclaiming thus we consult only our feelings; and leave our interests wholly out of consideration. It would undoubtedly be very delightful to bask in eternal sunshine, and be fanned by perpetual zephyrs. But though this uniform pleasantness of season would be very agreeable to our feelings, would it be equally serviceable in maturing those various productions of nature from which we derive nourishment while we are in health, and mitigation and cure when we are diseased? Many of the most valuable of our articles of food, and of our medicinal roots and shrubs, owe their perfection to weather which is as little soothing as possible to our taste and feelings. The comparatively valueless beauties of the hot-house would grow wild and unattended in all parts of the world were the weather always alike and everywhere mild. But we should pay dearly for those beautiful plants and flowers did we sacrifice for them the less comely but more serviceable alimentary and medicinal productions of the field and garden. If an equal temperature were perpetually kept up in all places, and during all times, two-thirds, at least, of our natural productions would disappear from the world. Instead of each nation and each country possessing something peculiar to itself and valuable to all, all nations would both possess and be destitute of precisely the same number and kind of articles. To say nothing of the deplorable state to which mankind would be reduced were they deprived of the largest portion of the valuable things which they now enjoy, this condition of things would put an instant and inevitable end to commercial intercourse between distant peoples. We, as well as the natives of Hindostan, should have spices, but we should be destitute of those articles which we now have in such abundance, that over and above supplying our own wants, we are enabled also to supply those of the dusky denizens of the East.

Moreover, the most terrible consequences would result from an equalization of the earth's temperature. Those wild and rustling winds which we so much complain of, and which mainly arise from the different temperature of different portions of our globe, would cease, indeed, to annoy us with their howling rudeness. But what would be the effect of the consequent stagnation of the air? Why, instead of being the most refreshing and the most healthful ministers to our health and comfort, it would become putrefied. We could not avoid inhaling it, yet to inhale it would be instant disease and speedy death. No art, no precaution, no exertion, could avert a terrible and universal pestilence, in which, men and animals alike would perish without hope of escape, and without elevation of their terrible and fatal agonies.

How very little reflection suffices to show us how thoughtless

and short-sighted we mortals are; and how wise and benevolent is that Omnipotent Being, who knows what we need better than we ourselves do, and who makes all things work together for our good! We cannot turn our attention to a single subject without rejoicing that we have God to watch over us, and to protect us against the silliness of our own wishes, and the selfishness, the unwise selfishness, of our own hearts.

USEFULNESS OF WATER.

THERE is scarcely one thing of which we, in this country, are so wasteful as water. In sultrier countries where that precious element is as scarce as here it is plentiful, the waste of a single drop of it would be viewed with all the abhorrence due to a positive and serious act of criminality. Among us, on the contrary, it is fairly questionable whether we do not waste fully as much as we use. This striking difference between the conduct of different people in relation to the selfsame article of consumption, strikingly illustrates a principle which we have often laid down, viz., that we never attach its full value to any thing until we have painfully experienced the want of it.

Never having any lack of water, finding it always at hand when we need it, we do not feel conscious of half the obligations of health and comforts which we owe to it. As a mere beverage it is not used to any great extent by any considerable portion of our population. It would be much better for the health of most of us were it more generally and largely used for this purpose. It is undoubtedly the chief, if not the only beverage intended for us by nature. And it is very well ascertained that water-drinkers are generally free from any painful chronic complaints, which are common to those who indulge in more exciting draughts. But though water in its *simple* state is not generally in use, as a beverage, there are very few kinds of beverage which can be prepared without its aid. This is more particularly the case with respect to the two most largely consumed articles of the kind, viz., tea and malt liquors. Neither of these articles, which are so much and so universally used that they may now, without much assumption, be called actual necessities to the majority of our population, could be prepared without the aid of water. Wine alone, or even cider, or other fermented juice, would not suffice to quench our thirst. And had we not water to use, either simply or compounded with other things, we should not merely suffer from great inconvenience, but, also, be afflicted with diseases to which we are now, happily, strangers.

Independent, however, of its value and importance, as a beverage, there are uses for water to which no other thing could be made sufficient. How important, for instance, to our health and how exceedingly augmentive of our comfort is the act of ablution. Here water *alone* will serve our purpose. The richest products of the soil, and the wine-press would be utterly useless to us here. We must have water, or we should soon become filthy, squalid, comfortless, and diseased. Even in this single point of view water is one of the most important of the many good things which God has given to us. But the uses, the important and most of them indispensable uses of water, are so multifarious that a mere enumeration of them would occupy a far larger space than we can afford to devote to even four or five subjects. Our readers have only to observe what is passing around them to perceive the vast importance of water. Having once perceived it, and reflected upon the result of their observation, we will not do them so much injustice as to doubt that they will feel more strongly than less reflecting persons, the value of water, and the benevolence of him to whom they owe abundance of it.

OF THE PREVALENCE OF ONE CLASS OF IDEAS AND ITS EFFECTS UPON THE MIND.

As we every where recommend study, we shall in this article treat of a habit which is very frequently injurious, and sometimes even fatal to the mind of ardent students; we mean the habit of perpetually applying to one particular branch of study.

One chief cause of the ignorance of mechanics and other labourers, is their perpetual application to one particular pursuit. To this their attention is rivetted, and though they excel in it, they have neither taste nor capacity for any other pursuit. By degrees their minds, however capacious they may originally have been, become narrow and incapable of enlargement, and they are incapable of any considerable mental application. There is, however, one very favourable circumstance in their case; though their minds are limited, they are not destroyed for their occupation, though it yields no intellectual profit, does not press with injurious partiality upon their intellect, but leaves it free for the reception of all impressions of sensible objects. Thus, though after serving an apprenticeship to a mechanical art, a man's mind is so narrowed, that it would be a hopeless task to endeavour to imbue it with any considerable intellectual capacity; yet, we find that such men are by no means destitute of shrewdness in the general affairs of life, or of interest and concern in its every day occurrences. Their minds, therefore, are *limited not warped*.

If, instead of devoting our attention to different branches of study at different times, we incessantly pursue one combination or one department of ideas, we either destroy the mind altogether, cause it to be capable of exerting itself only upon its one habitual subject, or upon all others but that, we bring on a general weakness and irritability of the mind, which, with its symptomatic bodily disorders, is called nervousness. In the first case we produce actual insanity, in the second partial insanity or delusion, and in the third a mixture of both, more terrible than either of them.

It is thus, that those who have devoted their lives and energies to search after the philosopher's stone, have generally terminated their career in a mad-house. The same portion of the brain being kept a perpetual state of vibration becomes diseased, and ultimately communicates its morbid irritability to the entire cerebral mass; and, according to the degree of violence of that irritability, the delusion is partial or entire.

With these facts before our eyes, it behoves us to be exceedingly careful to pursue no one class of ideas so exclusively as to allow one class of vibrations perpetually to occur upon the brain. By changing our studies frequently we relieve the mind, and we may keep it occupied for a greater length of time upon *several subjects successively*, than we can upon any one of even the least trying and abstruse.

HISTORICAL AND BIOGRAPHICAL MEMORANDA OF OCTOBER.

On the first of this month, 1207, was born, at Winchester, *Henry III.*, son of King John; and who, in 1216, succeeded to the crown. He is sometimes styled *Henry of Winchester*; and since the time of this monarch, princes' children have occasionally taken their names from the places of their birth, as *Edward of Carnarvon*, *Henry of Monmouth*, *John of Gaunt*, &c.

In 1554, Queen Mary, usually styled the Sanguinary, or Bloody, was crowned at Westminster. She was the daughter of *Henry VIII.*, by Catherine of Arragon, of the *line of Tudor*, and was

^f There have been exceptions, but so few that the general rule is almost the universal one.

born in 1517. She married PHILIP of Spain, eldest son of Charles V., in 1554.

In 1770, died at Newbury, about forty miles from Boston, in North America, the Rev. George Whitfield, a celebrated English divine, theologian, and controversial writer, and founder, in 1770, of the sect of Methodists. He was born in 1714. He was originally a minister in the established church. He instituted the *Orphan House*, in Georgia, in America; and erected two extensive buildings for public worship in London, one in Tottenham-court-road, and the other near Moorfields.

In 1795, died, at Dishley, in Leicestershire, Robert Bakewell, a celebrated farmer and grazier, and who was the greatest improver of horses and cattle that England ever produced. Many anecdotes are related of his remarkable humanity to animals.

In 1811, died, at Dromore, in Ireland, Dr. Percy, thirty years bishop of that see. He was a man of a very refined taste, and extensive erudition, and one of the oldest members of the celebrated literary club established by Dr. Johnson. His works were numerous and useful; amongst which we must not forget to mention his "Key to the New Testament;" which gives an account of the several books, their contents, their authors, and of the times, places, and occasions, in which they were respectively written. This justly popular work has passed through many editions, and is used by the Universities. He is also the author of "The Hermit of Warkworth," and of the beautiful well-known song, "O Nannie wilt thou gang with me?"

On the third, died, at Uri, in Scotland, RONERT BARCLAY, an eminent writer among the Quakers. He was born at Edinburgh, in 1648. His principal work is "An Apology for the Quakers."

On the fourth, 1704, SELKIRK was left on the island of Juan Fernandez, in the Pacific Ocean, by Captain SNAPELIA. Selkirk was born at Largo, in Scotland, about 1680. He was a bold adventurer, and a good navigator, and made several voyages to the South Sea, &c.; in one of which, having a quarrel with his commander, he was put ashore, as above named, with a few necessaries, a fowling-piece, gunpowder, and shot. Here he lived alone near three years, and was then taken off by Captain Woods Rogers. During the time of his remaining on the island he had nearly forgotten his native tongue. De Foe is supposed to have worked up his narrative into the *Romance of ROBINSON CRUSOE*.

In 1814, died Samuel Jackson Pratt, Esq., who commenced his literary life under the name of Courtney Melmoth. He was a very prolific writer, and all his works tend to promote the interests of virtue. He closed his earthly career at Birmingham, but was descended from a respectable family in Huntingdonshire.

On the seventh, 1795, died Dr. John George Zimmerman, a celebrated physician and philosopher. He was born at Berg, in the canton of Berne, in Switzerland, in 1728. His writings recommended him to the King of Prussia, and he was afterwards appointed, by the regency of Hanover, physician to his Britannic Majesty. His works are, a "Poem on the Earthquake at Lisbon," 1755; "A Physiological Dissertation on Irritability;" "An Essay on National Pride;" and "An Essay on Solitude;" this has been translated into French and English.

On the seventh, 1796, died Dr. THOMAS REID, a learned divine of the Church of Scotland. He was born in 1709, and was educated at the University of Glasgow, where he became Professor of Moral Philosophy. He was also greatly distinguished as a mathematician and metaphysician. His works are "An Enquiry into the Human Mind;" and "Essays on the Intellectual and Active Powers of Man."

On the eighth, in 1741, ADMIRAL BALCHEN, in the Victory

man-of-war, of 110 guns and 1100 men, was lost in a violent storm, near Jersey, and every soul on board perished. A monument was erected, commemorative of this melancholy event, in Westminster Abbey. He was born in 1669, and entered early in the navy, where, passing through several inferior stations, he attained the command of a ship, and greatly distinguished himself by his bravery in the Mediterranean, under Sir GEORGE BYNG. He was made admiral in 1734, and in 1743, was appointed Governor of Greenwich Hospital, but in the following year fell a victim to the element on which he had so long triumphantly shone, and as above described. The same spot also proved fatal to the son of Henry I., who was drowned there, November 26th, 1120, with above one hundred and forty young noblemen, of the principal families of England and Normandy. The king, on learning the calamity, fainted away, and was never seen to smile after. That part of the English Channel, in which the above events occurred, is usually called the *Strait, or Race of Alderney*, and, in stormy weather, the passage over is always considered dangerous.

On the eighth, 1795, died Dr. ANDREW KIPPIS, a celebrated divine and biographer. He was born in Nottingham, in 1727. He was a writer for some time in the *Monthly Review*; and in 1761, he had a share in a periodical work, called "The Library," which failed. He was the principal author and conductor of the second edition of that great work, the "*Biographica Britannica*." Five volumes of this work were published in his lifetime, and the greatest part of the sixth was prepared before his death. In 1788, he published the Life of Captain Cook, in one volume, 4to., and in the same year a Life of Dr. Lardner, prefixed to his works. His sermons are remarkable for perspicuity, elegance, and energy. He also wrote many other pieces. This great and good man was interred in Bunhill-fields, London.

On this day, 1821, died CHRISTOPHE, King of the island of Hayti, by the title of HENRY I. Christophe gained his high station by intrigue and the sword, and maintained it by rigour and despotism: which severity at length excited the rebellion by which he lost his crown and life. Christophe was a native of the island of St. Christopher, one of the windward islands. HAYTI is now a republic, and governed by a president.

The eleventh of this month, 1797, is noted for Duncan's victory over the Dutch fleet, off Camperdown, near the island of Texel, on the coast of Holland. In consequence of this most splendid victory, Admiral DUNCAN was created Lord Viscount Duncan, of Camperdown, to which honour a pension of 2000*l.* per annum was annexed. Admiral Duncan was born at Dundee, in Scotland, in 1731, and was of an ancient and respectable family. He died in 1804. The Dutch fleet, in the above engagement, was commanded by the celebrated Admiral De Winter.

On the twelfth, 1492, COLUMBUS discovered St. Salvador, one of the Bahama Islands, in the West Indies. This was the first land he saw in the *New World*. From St. Salvador he sailed to Cuba, and afterwards to Hispaniola, now called Hayti. After having discovered other islands, and taken possession of them in the names of their Catholic Majesties, he returned to Europe, taking with him some of the natives. Columbus was born at Genoa, in 1447, and died at Valladolid, in Spain, in 1506.

On this day, 1702, SIR GEORGE ROOKE, with the English and Dutch fleet, attacked the French fleet, and the Spanish galleons, in the port of Vigo, in Gallicia, in Spain, when several men-of-war and galleons were taken, and many destroyed, and abundance of plate and other valuable effects fell into the hands of the conquerors. Sir George Rooke was born in 1650, and died in 1708.

On the 13th, 1815, NAPOLEON BONAPARTE, who lately
bestrode

the majestic world like a colossus," arrived at St. Helena, "as exile prisoners;" affording a striking instance that if "vanitizing ambition" can raise a man from the lowest station, it can also prostrate him from the highest. A declaration ascribed to this captive chief is full of wisdom, and offers a salutary lesson to "the wicked rulers of mankind": "*I have sinned against the liberal ideas of the age, and I have fallen!*"

On the 14th, 1066, was fought the memorable *Battle of Hastings*, which transferred the crown of England to WILLIAM, Duke of Normandy; and October 14th was the day of the birth, as well as of the defeat and death of HAROLD II.

HAROLD and his two brothers, who were also slain in this engagement, were interred in Waltham Abbey Church, Essex. A plain stone, of gray marble, was, it is said, erected over the king with this expressive epitaph, "*Haroldus Inflexus; the unhappy Harold.*

On this day, 1601, died at Prague, in Bohemia, the illustrious Astronomer, TYCHO-BRAHE, repeating several times "*I have not lived in vain!*" He was born in 1546, at Knudstorp, in Schonen, in Sweden, a district which at that period belonged to Denmark; hence he is styled the "*Danish Astronomer.*" His works show him to have been a very accurate observer. He made several important discoveries, and was the first who determined the effects of refraction; whereby we see the Sun, or any star, above the horizon, before it is so in reality; as we see the bottom of a vessel when filled with water, which, in the same position we do not perceive when empty. Among his works, the best are "*The Rudolphine Tables;*" and "*The Historia Celestis.*"

COUNTRY CHARACTERS AND CHARACTERISTICS.

THE SHEPHERD AND HIS DOG.

THERE is the shepherd with his faithful and intelligent dog; and his well-tended flock are spread around, cropping the short but sweet herbage of the downs. Of all the characters one meets with in the country, there is none who has so much of the simplicity of nature associated with him as the shepherd. In the second generation of the human race, as we have it in Holy Writ, the only

* The following further remarks on the expression, "*I have not lived in vain,*" are worthy of notice. DR. ROBERTSON, the Historian, in one of his last conversations with DR. EASTLINE, expressed his joy in reflecting that his life on Earth had not been altogether in vain. FRIENDS, a few hours only previous to his dissolution, speaking of the torments of his disorder to a friend, told him, that the joy he then felt in his mind in the review of his public instruction, stood, as it were, in battle array betwixt him and the agonies which he endured. "I shall be happy," says the pious STRUM, "it, at the close of life, I carry with me to the grave the merit of having been useful to society." Of persons, whose studies and pursuits are accommodated to general utility, it may be truly affirmed, that they live to some purpose; which can never be said of those, how uncommon soever their abilities and attainments, who spend life in abstract speculation; and produce nothing of real use and service to their fellow-creatures. The soul-cheering expression, *I have not lived in vain*, was never more appropriately used than by LORD GRENVILLE, when he brought the *Slave Trade Felony Bill* into the House of Lords, May 7th, 1811. His Lordship then observed, that it had been his good fortune to introduce that act into the House, which was first passed for the *Abolition of the Slave Trade*. He considered it, he said, as the most honourable act of his public life; and might say at the close of that life, —*I have not lived in vain.* The last words which the immortal NELSON uttered were, "*Thank God! I have done my duty!*"—SOUTHEY'S *Life of Nelson.*

record upon which we can implicitly depend for the ages and the races of which it gives us the history. Abel, the second born of men, was a shepherd; and because of the greater simplicity and purity of his life, and the consequently greater acceptability of his offering in the estimation of his Maker, he was murdered by his elder brother Cain, the husbandman; and thus was the first victim of the human race,—the first upon whom death passed.

The fabled golden age of the ancients was an age of shepherds; and the notion of it was in all probability founded on the Bible account of Abel. Be that as it may, in the whole history of both the Old and the New Testaments, the shepherd is always used as the symbol for the man of gentle manners; the one who is kind and compassionate to the helpless; he who leads those under his care to "the green pastures, beside the still waters," and who "gathers the lambs in his arms, and carries them in his bosom."

It is not meant to be said, that at the present day farmers murder shepherds; or that there is any more of substantial virtue, or of real vice in the one of them than there is in the other. But the testimony in favour of the shepherd is so general, and comes from the annals of so many nations, that it is altogether impossible not to believe that there is not only some truth, but a great deal of truth in it. It is not a matter that calls for any science, but merely one of the most common observation; one which any body can perfectly understand, though they know not one letter of the alphabet; and, therefore, it is one about which there can hardly be a mistake.

In fact, there are many causes that conspire to make the life of the shepherd a life of purity as well as simplicity. One, however, is almost decisive. It would be perfectly absurd to suppose that we learn to be vicious from any thing in nature. Vice, of whatever kind it may be, is of human origin, and there are no examples of vice on trackless downs or on green hills; as little are there any in sheep or sheep dogs; and though foxes will kill and steal, and ravens destroy the diseased of the flock, their depredations have no resemblance whatever to the crimes of human beings. Those animals are just as much in the way of nature when they kill sheep, or punch out the eyes of sick or weakly ones, as the sheep are when they nip the blades of grass, or the shepherd when he cuts his bread and quaffs the clear water of the spring; and thus, though he may regret what they do, that can never teach him any human vice, or lead him to the perpetration of any human crime.

By the shepherd is not meant the man who opens the gates of the enclosure, or shifts the hurdles, or otherwise disposes of the sheep on the agricultural farm. That is no genuine shepherd's employment, he must be on those wilds which no plough has broken up for centuries, and there must be nothing of human nature there but himself. The pathless downs and the trackless moors, are the two places for finding the shepherd, because on them he is in his primitive state; and there are some places of the country where the shepherd on the moor does not see a human being for months. But so far from being idle or lopely, he is very busy; and very happy. It is astonishing how much more companionable and cheering to the mind the scenes of nature are, than scenes of art where one meets with no people. But on reflection, the cause is easily seen. When we find any scene of art without inhabitants, we are reminded of death and ruin; and the nearer the scene is, and the less it is changed, the painful feeling is the more keen; because it tells us, that the cause of desolation must have been serious; and near our own time. If one meets with a trace of the ancient Britons, one feels very little emotion, but is rather led into a train of purely historical meditation; and if one comes to a Roman camp, or to a tessellated pavement, one can examine it as a matter of mere curiosity. One does not much mind,

the ruins of the baronial castles ; and can look upon Carisbrook, or Caernarvon, or any of the other fragment of once mighty structures that spot the land, with the same indifference, or the same search of picturesque effect, as if they were grey stones that man had never touched. But when we come to a deserted house, in which the traces of inhabitants are still visible, it is another, and



THE SHEPHERD AND HIS DOG.

far more painful matter ; and there are few sights that bring more touching sorrow to a man, than when, after a long absence, and many fond thoughts of the place of his nativity, he comes back to it, and finds it razed, or the spoiler in the act of razing it, even for the purpose of erecting a finer one on its site.

With natural scenes and objects it is far otherwise. They call forth no regrets or other painful thoughts. They have no ruins, but are ever new. When the frost breaks down a portion of the cliff, it is a new heap of stones below ; and when the flood of the river wears away the steep bank, there is a new meadow formed on the other side.

But the shepherd has not even that. His solitude is in the soft season ; and all the sights around him are sights of peace and tenderness ; and he gives himself up to the study of nature. He knows all the signs of the atmosphere ; and when he retires to his cot at night, he knows to what kind of morning he shall waken ; and when he comes out in the morning, he sees the weather of the day to its close. The very dew on the grass is a monitor to him, and the voice of the wind is perfectly intelligible. If that murmurs softly like a flute breathing a mournful tune on the minor keys, then he takes his thickest cloak with him, and leads his charge to the neighbourhood of the little cave or the shelter stone. But if the voice is as clear as a bell, he knows that the day will be dry and exhilarating.

It is astonishing what keen eyes those shepherds have, and how indeed all their senses are quickened by the freshness of the open down. The shepherd will not only see a sheep at a distance where you can hardly discover a white speck, but he will be able to say whether that sheep belongs to his flock or not. At parting or at gathering time, his eye runs far faster than the pen of the readiest accountant, or than the expertest tallyman can number with the hand. The flock may be hundreds, nay, thousands, and yet he can see at a glance if even one be missing ; and not only that, for he can instantly recollect the time and place when it was

last safe ; and when the rest are once settled, he can go and find the lost sheep, or ascertain that it has been destroyed, in a manner which those who are not acquainted with what attention and habit can accomplish, would not credit.

The dog, which is the companion and playfellow of his master, and would no more be separated from his master, or his master from him, than an ordinary man would be from his oldest and fastest friend, is perhaps the most wonderful of the two. In those wilds the shepherd and the dog have a language of their own ; and the dog could not understand or obey the orders of a stranger, even though he were, as all true shepherds' dogs are, very docile and willing to obey ; and as little could a common dog understand and obey the shepherd. One general trait in good sheep dogs is never to bite a sheep. If the sheep "stand at gaze," the dog will run in and pinch the hind leg of the "bell-bearer," but never to such an extent as either to bruise the flesh or cut the skin. The dog hits as neatly on the place near the joint, where a smart twitch of pain causes no injury, as the most skilful anatomist knows how to twitch the "funny bone" of the elbow. The dog does more than that. The shepherd always points out to the dog the direction in which the sheep are to be driven ; and if they are "brought up" by the "standing" of the leader with their heads out of the direction, the dog, if they will not obey his call, (for he always tries that first), and he is forced to "go in," turns the leader at the same time that he sets him forward, in the same way as the rudder turns a vessel. He pinches the leg on the side toward which the sheep are to go ; and as (as is well known of horses when they are once pricked by the bayonets in a charge) animals always run upon the pain, the sheep is turned round ; and it is probable, that the pinch is sharp in proportion as the direction is to be turned. If the sheep is to go straight on, the dog pinches both legs as quick as lightning. It is not often, however, that the dogs on the open sheep-walks have occasion to do that. There is little there to alarm the sheep ; indeed, walks that give much actual oil either to the shepherd or the dog, are never of much value. Sheep that are much disturbed or raced about, never thrive well. A sheep is a tender as well as a timid creature ; and it is always most valuable when it is most gently used.

The conduct of the sheep dog is not at all analogous to hunting, even when he is sent to drive intruders from the pasture ; and his own flock are not afraid of him,—so far from that, indeed, hat he will sometimes gather in the stragglers, merely by calling to them. But while the flock are obeying without fear, and in an orderly manner the voice of their own dog, let but some unbred dog set up his tuneless yelp, and they will be all "gazing" and hen "wide," the next moment. Ill-bred dogs in sheep-walks are, like ill-bred men in company, horrible nuisances.

It is very pleasing to see the shepherd and his dog dining together on the moor. There is a perfect understanding between hem. The dog does not yell for his food like a beagle in a kennel, and as little does he fawn and cringe for it like a spaniel. The dog looks on with the utmost patience while the shepherd ties the little store, and then, as both have equally won it, it is 'a bit to you, and a bit to me,' till both are satisfied. Men help their friends first, and so does the shepherd his dog ; and if they are on short commons, it is the shepherd that bears the hunger. So he may, the dog not only saves him many a weary mile, but nables him to do what ten men could not accomplish without the dog.

The group after dinner is as interesting as some that are more fashionable. The shepherd leans on his elbow, and looks alternately at the dog and the sheep, if these happen to be widely spread. The dog lies with his fore-legs stretched out, and keeps us eye on his master all the time. If the morning has been fatiguing and hot, the shepherd covers himself with his cloak and takes his siesta, but while the master is asleep, the dog never loses an eye. He sits and watches, and if any part of the flock wander, he hurries off to call them in ; and when the shepherd awakes he finds every thing right. One of the prettiest little pictures in pastoral life is, that of the shepherd sleeping, the dog watching, and one or two sheep looking on. In short, when in state of nature, the shepherd is a delightful character, the dog admirable, and the flock useful.

THE GUIDE TO KNOWLEDGE.

EDITED BY MR. W. PINNOCK,

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THE WONDERS OF ANIMATED NATURE.



OF THE ELEPHANT.

Of the ELEPHANT, there are several varieties, but all agreeing in their generic and specific distinctions. In size and strength they surpass all quadrupeds, and in sagacity are only inferior to man.

To describe their exact size is very difficult, as they have been seen from *seven* to fifteen feet high; and no description can convey a just idea of their magnitude, unless the animal itself has been presented to the view. This wonderful quadruped is a native of *Asia* and *Africa*, but is most numerous in the latter. They are found chiefly between the river Senegal and the Cape of Good Hope, and here they abound more than in any other part of the world. In their natural state, ELEPHANTS delight in frequenting the banks of rivers and moist situations, environed with the thickest woods. They always disturb the water before drinking; and often

fill their trunks with it, spouting it out in the manner of a fountain for amusement or revenge.

Though the ELEPHANT is the strongest as well as the largest of all quadrupeds, yet in a state of nature it is neither fierce nor mischievous; but mild and peaceable in its disposition, it neither exerts its force nor strength. In its native deserts this animal is seldom seen alone, but appears to be particularly social and friendly with its kind, the oldest of the troop always appearing as the leader, and the next in seniority bringing up the rear. This order is, however, merely observed when they are upon the march in search of cultivated grounds, where they expect to have their progress impeded by the proprietors of those lands they are going to lay waste. The largest Elephants are found in India. Its colour is that of the mouse. Its skin is so hard, that a sharp sword cannot penetrate through it, especially on the back; the most tender part being under the belly. Although its eyes are peculiarly small,

yet they are completely expressive of what the creature feels; and when turning them upon an affectionate master, it is astonishing to observe how much tenderness they reveal. Its sense of smelling is also very delicate, and it evinces a great fondness for odorous flowers. Its hearing is likewise remarkably acute; and no animal is so exquisitely affected by the touch. It has four teeth in each jaw, with which it grinds its meat like meal; besides these, it has two others, which hang out beyond the rest; these two are ivory. In the male they grow downwards, in the female, upwards. Those of the male are the largest; those of the female are smaller, but sharper. One of them it keeps always sharp, to revenge injuries; and with the other it roots up trees and plants for its food. The tooth of the male grows to about ten feet in length, and are frequently found to weigh upwards of three hundred pounds weight. The teeth of the female are considered the most valuable. Those they lose once in ten years; which, falling off, they carefully bury them in the earth, (as is thought) on purpose that men may not find them. Its legs are massy columns of three or four feet in circumference, and five or six in height. Its body is remarkably round and bulky, and nearly destitute of hair. But the most singular and peculiar characteristic of this extraordinary animal is its proboscis, or trunk; and of all the instruments which the super-abundant wisdom and goodness of the Creator has bestowed on the various forms of animal life, this is perhaps the most complete and the most admirable. It is composed of nerves, membranes, and sinews, and is the organ of smelling, and also serves him as a hand, to receive his food. It is crooked, grisly, and flexible; and has the power of contracting, lengthening, and turning in every direction. With this instrument, the animal can lift from the ground the smallest piece of money, select herbs and flowers, and grasp any thing so firmly that no force can tear it from its grasp. Besides the above peculiarities of the Elephant, it has several others that are well-deserving of our notice. Its legs are high and very strong, the joints of which they can bend at pleasure. Its feet are round, like those of a horse, and very broad. It is a great lover of wine, and will drink (if fame be true) about fourteen gallons at a time, of either wine or water. It goes with young about two years, and brings forth but one at a time, and that about the size of a calf, and grows to thirty. If it receives no hurt it will live from one to two hundred years.

Of all animals, the Elephant, when tamed, is the most gentle, and obedient. Its attachment to its keeper is remarkable; and it seems to live but to serve and obey him, and when treated with kindness, it testifies its gratitude by fulfilling all the desires of its keeper, and caressing him with affectionate fondness; receives his commands with attention, and executes them with punctuality and zeal; bends its knees when he expresses a wish to ride, and willingly exerts its utmost strength, which, in drawing burdens, is equal to that of six horses; and, without fatigue, it can support about four thousand pounds weight upon its back.

Though this animal seems capable both of gratitude and affection, disappointment or injustice produces resentment and spleen; and, though faithfully attached to a kind protector, the least alteration in his behaviour would be indignantly received. Before the destructive use of fire-arms was known, the princes of the East placed their chief dependance in war on the number and discipline of their ELEPHANTS; but now, they chiefly use them for parade, or as beasts of burden. This animal, notwithstanding its enormous bulk, does not by any means want quickness in its movements. It trots with considerable agility, and can easily overtake a man at his greatest speed; but, as it cannot turn very readily, he is able at any time to escape from it by running to one side. Hunters

are able to kill it by attacking it from behind, or on the flanks.

The natural instinct of ELEPHANTS induces them to live in society; they consequently are observed in great numbers in the interior of the forests: these they seldom leave, except for the purpose of devastating the neighbouring plantations. Their troops or herds consist of from forty to a hundred, of both sexes, and all ages. They are conducted, as before observed, by the two oldest, one in front, and the other in the rear. When they leave the forests, if there is any appearance of danger, they observe a determined order of progress: the young ones are placed in the middle, surrounded by the old ones.

Some Elephants live in solitude, and entirely apart from society; these are called by the Indians *grondahs*. They are always males, which, it is believed, have been chased from the herds, by the jealousy of other individuals of their sex. They are, in general, excessively ferocious: they often leave the forests, attack mankind without the least provocation, lay waste the fields, throw down the huts of the peasants, and destroy the cattle. The farmers are frequently compelled to set guards against them, who are posted, for the purpose, in a kind of sentry-boxes, of great strength, formed of bamboo. When the men perceive one of these ELEPHANTS approaching they give the alarm to each other, and drive away the animal by making a great noise, and by firing at it with muskets. When these Elephants penetrate into villages they commit the most dreadful desolation. The Elephants that live in troops are not dangerous, unless they are irritated: a man may pass very near them without in the least degree attracting their notice.

The manner of taking and taming animals of so prodigious a strength, which seems to set all human power at defiance, deserves a few remarks. In order to take them wild in the woods, a spot of ground is fixed upon, which is surrounded with a palisade, made of the thickest and strongest trees, joined by cross-bars, which tend to increase their strength. These posts are fixed at such a distance from each other that a man can easily pass between; and there is only one great passage left open, through which the Elephant can easily come, which is contrived upon such a principle as to close upon him the moment he has passed. To decoy the animal into this snare, it is necessary to conduct a tame female into the woods, which its keeper compels to set up a cry that instantly attracts the attention of one of her male friends, and induces him to follow the alluring sound, until he finds himself entrapped beyond retreat. The deceiving object of his solicitude still continues to lament and cry, and he pursues her into a confined passage, that it is impossible for him either to proceed or return; but when he perceives her let out at a private door he begins to show violent marks of indignation at the deceit. The hunters, in the meantime, fix cords around his body, and endeavour to soften his anger by throwing buckets of water upon his back, pouring oil down his ears, and rubbing his body with fragrant leaves; two tame animals are then introduced to him, each of which alternately caress him with their trunks; afterwards a third is brought forward that has been taught to instruct the new-comer, upon which an officer of some distinction rides. The hunters then open the inclosure, and the tractable creature leads his captive along until they arrive at a massy pillar, to which, for about twenty-four hours, it is tied. During that period, its indignation begins to subside, and in the course of a fortnight it becomes completely tamed, acquires an attachment for the person who attends it, and thoroughly comprehends the different sounds of his voice.

Among the numerous anecdotes of the Elephant, the following are among the most interesting.

AN ELEPHANT that was kept at *Versailles*, seemed to be sensible of it when any one attempted to make sport of him, and to keep the affront in mind till he found an opportunity for retaliation.

A PAINTER wished to make a drawing of this animal in an unusual attitude, with his trunk elevated, and his mouth open. In order to keep the Elephant in this position, the artist's servant threw fruit into his mouth, but more frequently only made him believe that he was about to do it. Although this greatly irritated the Elephant, he did not attack the servant, but, as if sensible that the painter was the instigator of the deception that had been practised upon him, he directed his eyes towards the latter, and threw out of his trunk such a quantity of water upon him as completely destroyed the drawing.

This Elephant generally availed himself less of his strength than of his ingenuity. He once unbuckled with the greatest calmness and deliberation, a strong leather strap, which had been fastened round his legs, and as his attendant had tied the buckle round with packthread, and secured it with many knots, the animal very deliberately unloosed them all, without breaking either the strap or the packthread.

ACOSTA relates the following circumstance. A soldier in *Lochin* threw, in sport, the shell of a cocoa-nut at an Elephant. The Elephant felt the affront, but dissembling his resentment, picked up the shell. Some days after, seeing the soldier walking along, he stepped up to him, and returned the compliment, by throwing the same shell in his face. He then walked off, seemingly much pleased at having thus retaliated the affront he had received.

Another soldier refused to give the road to an Elephant and his conductor, at which the Elephant was highly affronted. Some days after meeting the soldier upon the banks of a river, at a time when he had not his keeper with him, he seized him with his trunk, ducked him several times in the water, and then let him go.

IN DELHI, an Elephant passing along the streets, put his trunk into a tailor's shop, where several people were at work, one of them pricked the end of it with his needle; the animal passed on; but in the next dirty poodle filled his trunk with water, returned to the shop, and spouting every drop among the people who had offended him, and spoiled their work.

An Elephant in *Adasmeer*, in India, often passed through the bazaar, or market, and as he went by a certain herb-woman, always received a handful of greens: at length he was seized with one of his periodical fits of rage, broke his fetters, and running through the market, put the crowd to flight, and among others this woman, who, in haste, forgot a little child she had brought with her. The animal recollecting the spot where his benefress used to sit, took up the infant gently on his trunk, and placed it in safety on a stall.

MR. BUSSY informs us, that an Elephant having once killed his keeper in a fit of resentment, the wife of the man, who was witness of the terrible scene, took her two children and laying them down at the feet of the animal, said to him—"As you have killed my husband, you may now kill me and my children also." The Elephant immediately grew calm, and, as if struck with remorse, took up the eldest boy with his trunk, placed him upon his back, and from thence forward would suffer no other person to ride him.

The above engraving represents an Elephant attacking a Rhinoceros.

OF THE RHINOCEROS.

Of this animal there are two varieties, one with a single horn, the other with two, on its nose. Next to the elephant, it is the

most powerful of all quadrupeds; and the most bulky except the *Hippopotamus*. Its length is commonly twelve feet, its height six or seven, and its circumference is nearly equal to its length. It is a native of the same countries, and inhabits the same forests as the elephant.

Many fabulous accounts have been given of this animal respecting its fierceness, as well as his strength. The one which was shown in London, in 1739, never was out of humour but when ill used; appeared both submissive and attached to his keeper; and seemed perfectly to understand the meaning of his threats. The appetite of this animal, though very young when it left *Bengal*, was so astonishingly great, that it is said the expense of his food and passage amounted to nearly a thousand pounds. The skin of this animal is so hard as to resist the sword and spear, and the shot of hunters. He is a mortal enemy to the *Elephant*, whom he seldom meets with without a battle; and aims chiefly at the belly, being the softest part, which, if he miss, the elephant is too great a match for him with his trunk and teeth.—(See the engraving.)

The horn of the Rhinoceros sometimes measures nearly four feet in length, by six or seven inches at the base, which is usually of a brown or olive colour. The form of the head greatly resembles that of the hog, but the ears are larger, and stand erect: the eyes, though small, are bright and piercing, and the legs remarkably strong and thick. Like hogs, it is fond of wallowing in marshy places, and lives entirely on vegetable food. The horn is said to possess great medicinal virtues.

The two-horned Rhinoceros is a very scarce animal. It is found only in Africa; and was a long time supposed to be merely a fabulous creature, till observed by DR. SPARRMAN, at the Cape of Good Hope, and described in his travels. The two-horned Rhinoceros has never yet been brought into Europe. Indeed, the history of its tribe is not yet freed from difficulties.

ANCIENT ARGUMENT IN FAVOUR OF UNIVERSAL KNOWLEDGE.

THE great ALFRID, the patriot king of England, had a saying, "That he reputed a man freeborn, and yet illiterate, no better than a beast, a brainless beast, and very sot." Nor would he admit any one into office in his court, however deserving their pretensions in other respects, who was not learned.

APOPHITHEGMS.

It ought always to be steadily inculcated, that virtue is the highest proof of understanding, and the only solid basis of greatness; and that vice is the natural consequence of narrow thoughts, that it begins in mistake, and ends in ignominy.

Honour and justice, reason and equity, go a very great way in securing prosperity to those who use them; and, in case of failure, they secure the best retreat, and the most honourable consolation.

Solon being asked why, among his laws, there was not one against personal affronts, answered,—that he could not believe the world so fantastical as to regard them.

A passionate temper renders a man unfit for advice, deprives him of his reason, robs him of all that is great or noble in nature, makes him unfit for conversation, destroys friendship, changes justice into cruelty, and turns all order into confusion.

To be able to bear provocation is an argument of great wisdom; and to forgive it, is a proof of a great mind.

What men are deficient in reason, they usually make up in rage.

OF THE FOUR NEW PLANETS—VESTA, CERES, PALLAS, AND JUNO.

WITHIN the present century four new planets have been discovered, which had escaped the notice of astronomers on account of their smallness; their orbits are between those of *Mars* and *Jupiter*.

The nearest of these to the Sun is called VESTA, and it is calculated that her mean distance from him is 222,000,000 of miles. She is very small, but no accurate admeasurement has yet been made of her diameter, some estimating it at only 80, and others as high as 4000 miles. It seems scarcely probable, that a globe, not more than eighty miles in diameter, would be visible, even with a telescope, at the distance of so many millions of miles.

Vesta performs her revolution round the *Sun* in five years and twenty-three days. As no observations have been made on her diurnal rotation, or the inclination of her axis, the length of her day and night is unknown.

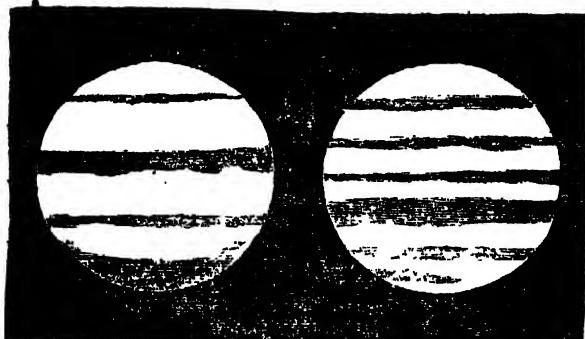
Vesta was discovered by DR. OLBERS, of Bremen, March 29, 1807. The next of these planets is *Ceres*, which is 265,000,000 of miles from the *Sun*, and performs her revolution round him in four years, twenty-one days and a half. Her diameter has been estimated at 160 miles. It is hardly possible to suppose, that so small a globe can be inhabited.

CERES was discovered Jan. 1, 1801, the first day of the present century, by M. PIOZZI, of Palermo, in Sicily. This planet was so named in honour of *Ceres Ferdinandæ*, King of Naples.

PALLAS, discovered by DR. OLBERNS, March 28, 1802, is exceedingly small, being, according to Dr. *Herschel*, not more than thirty miles in diameter, though, by others, she is estimated at 110. She is 265,000,000 of miles from the *Sun*, and makes a circuit of her orbit in the same time as *Ceres* does.

JUNO, discovered September 1, 1804, by M. HARDING, of *Lilienthal*, near Bremen, revolves at about 290,000,000 of miles from the *Sun*, and is 5 years, 182½ days performing her course. She appears like a star of the eighth magnitude, but the measure of her diameter has not yet been ascertained. Her orbit lies between the orbits of *Mars* and *Ceres*.

OF JUPITER.



From the contemplation of these diminutive planets, we turn to the mighty JUPITER, which, from his immense bulk, is very probably named after the *fabulous* king and father of the *gods* and *men*.

This immense planet is 89,170 miles in diameter, and is about 1400 times larger than the *Earth*. His mean distance from the *Sun* is computed at 490,000,000 of miles, and he moves in his orbit at the rate of about 25,000 miles an hour, or about one-fourth of the velocity of *Mercury*.

But while his motion in his orbit is thus comparatively slow, his diurnal rotation on his axis is amazing, being not less than 26,000 miles an hour.

The time of Jupiter's revolution in his orbit, is 11 years, 315 days, 14 hours; and on his axis 9 hours, 56 minutes: his year is therefore 12 of ours, but his astronomical day is not half so long as that of the *Earth*.

JUPITER, when viewed through a telescope, appears to have a luminous atmosphere, in which spots and streaks are seen, the latter of which are denominated *Belts*. That these are formed in some fluid substance is evident, from their frequently varying their number, their form, and their direction. Sometimes several belts are seen across the body of the planet; sometimes these coalesce into one broad belt; sometimes the belts are in a diagonal* direction, but this is a rare occurrence.

If we may hazard a conjecture, it seems probable that this luminous atmosphere is intended by its GREAT CREATOR to supply the want of light to *Jupiter*, occasioned by his great distance from the *Sun*; for as the *Sun* appears to *Jupiter* forty-eight times less than he does to us, his light must be so small in proportion, and if the satellites of *Jupiter* reflect only the light they receive from the *Sun*, the assistance they afford must be trifling indeed.

If, on the contrary, we suppose *Jupiter*, *Saturn*, and *Uranus*, to be thus provided with a supply of light in addition to that which they receive from the *Sun*, the spots and belts on their surface will be rationally accounted for, as well as the brilliancy of their satellites, which are at too immense a distance to be completely illuminated by the *Sun*'s rays. The openings in the atmosphere of *Jupiter*, by which his opaque body is partially seen, assume the form of belts, probably, in consequence of the great swiftness of his rotation on his axis.

The form of *Jupiter* is that of an oblate spheroid, his equatorial diameter exceeding his axis by six thousand miles; this, however, is so small in comparison with his bulk, as to detract but little from his rotundity.

The axis of *Jupiter* is nearly perpendicular to the plane of his orbit, so that he has no variety of seasons; this is another proof of infinite wisdom in the arrangement of the planetary worlds, for had his axis been much inclined, vast tracts round the poles would have been deprived of the *Sun*'s influence for six of our years together.

Jupiter is attended by four secondary planets, or satellites, which revolve round him as their primary, and with him round the *Sun*; the first of these, which is rather more distant from him than the *Moon* from the *Earth*, performs its revolution in 1 day, 18 hours, 27½ minutes; the second, about 420,000 miles distant, revolves in 3 days, 13 hours, 13½ minutes; the third, about 676,000 miles distant, in 7 days, 3 hours, 42½ minutes; and the fourth, about 1,200,000, in 16 days, 16 hours, 32 minutes.

Imagination cannot picture to itself a more magnificent and sublime object than *Jupiter*, when viewed from his satellites. The *Earth* appears exceedingly large and splendid to the inhabitants of the *Moon*, it being forty-nine times the bulk of that satellite. But what must this be compared with the view of *Jupiter* from the nearest satellite; the distance is but little more than that of the *Moon* from the *Earth*; yet, the bulk of *Jupiter* is 68,000 times that of the *Moon*.

The satellites of *Jupiter* are, at certain times, hidden from the view of the *Earth* in two ways; either by their passing through the shadow of their primary, which constitutes an eclipse of the satel-

Diagonal, drawn across a figure, from one corner or angle to another.

lite, by passing behind his body, which is denominated an *occultation*.

By accurate observations made on these Eclipses and occultations, the distance of *Jupiter* from the Earth, the progressive velocity of light, and the longitude of places may be determined.

The velocity of light may be discovered with tolerable accuracy, by observing how much sooner an eclipse of one of his satellite may be seen when *Jupiter* is in his *perigee*, or nearest distance from the Earth, than when he is in his *apogee*, or greatest distance: as this is about a quarter of an hour, light traverses the diameter of the Earth's orbit in that time, and consequently from the Sun to the Earth in between seven and eight minutes.

The difference of longitude between two places may be found by a person at each of the places observing the same eclipse of one of *Jupiter*'s satellites; the difference of the computed time being turned into degrees and minutes, reckoning an hour equal to fifteen degrees, will give the difference of longitude between the two places.

Both the planets and their satellites appear to move in a different direction at different times; at one period seeming to move from *west* to *east*, and at another from *east* to *west*; the former is called their direct, and the latter their retrograde motion.

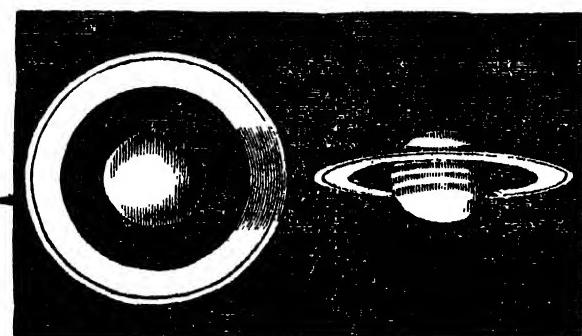
When a planet is arrived at the eastern or western extremity of its orbit, it seems for a time to be stationary, though it is in reality moving with its usual velocity; these appearances are merely the result of the situation of the planet's orbit as it respects the Earth.

The satellites of *Jupiter* sometimes transit his disk, but are too distant to be observed in that situation, unless with a very powerful telescope, especially as their illuminated side is then wholly or partially turned towards the Earth.

Notwithstanding the different periods of their revolution, these satellites sometimes rise at the same time, and sometimes all are on the meridian together. In these positions they must present a very interesting spectacle.

The satellites of *Jupiter* were first discovered by *Galileo** in 1610, who called them *Medicean stars*, in honour of the family of *Medici*, his patrons.

SATURN.



NEXT to *Jupiter* **SATURN** is the most stupendous planet of our SYSTEM, and, with the exception of *Uranus*, the most remote. In consequence of his great distance, he shines with a pale feeble light, yet not one of the heavenly bodies presents more interesting phenomena when viewed through a good telescope.

SATURN moves in an *orbit*, the mean semidiameter of which is

900,000,000 of miles, which is consequently his distance from the SUN. And as his motion in his orbit is only 22,100 miles an hour, he is 29 years, 174 days, 2 hours, in completing his annual revolution, so that his year is nearly thirty of ours.

The diameter of **Saturn** is 79,600 miles, so that he is about one thousand times as large as the Earth; for globular bodies are to each other as the cubes of their diameters.* The inclination of his axis to the plane of his orbit is very small, no doubt for the same wise reason which occasioned *Jupiter*'s to be so, because, were it otherwise, each of **Saturn**'s poles would be immersed alternately in fifteen years partial darkness; at least it would be that period without the influence and even the sight of the Sun.

As **SATURN** is more than twice the distance of **JUPITER** from the Sun, the light that he receives from him must be proportionably small; but this deficiency is amply made up by the goodness of the CREATOR, who has furnished this mighty globe not only with an atmosphere resembling that of *Jupiter*, and with seven attendant satellites, but with two luminous rings, which encompass his body, at a considerable distance from it, and shine with a reflected light.

These rings present a different appearance at different times to the inhabitants of the Earth, according to the relative position of the two planets. Sometimes **Saturn** is so situated as respects the Earth, that the two concentric rings can be distinctly seen, together with a void space between them, and that between the inner ring and the body of the planet. At other times the rings appear merely as a dark line across the planet's disk, extending beyond it at both ends, so as to resemble handles; in this position they are called *Anse*.

Many conjectures have been formed respecting the nature and uses of these rings; but from their immense magnitude, and their appearing to be opaque, shining only with reflected light, they are, probably, solid habitable bodies; their dimensions have been calculated as follows:

	Miles.
Inner diameter of the smaller ring.....	146,345
Outside diameter of ditto	184,393
Inner diameter of larger ring	190,248
Outside diameter of ditto	204,883
Breadth of the inner ring	20,000
Breadth of the outer ring	7,200
Space between the rings.....	2,839

Besides this ring, **Saturn** has seven satellites revolving round him, at different distances; the *sixth* and *seventh* are nearer to their primary than the other *five*, but were discovered much later, which accounts for the manner in which they are numbered.

The *first* satellite is 170,000 miles distant from its primary, and evolves round him in 1 day, 21 hours, and 19 minutes; the *second* 217,000 miles distance in 2 days, 17 hours, 41½ minutes; the *third*, 303,000 miles in 4 days, 12 hours, 25 minutes; the *fourth*, 704,000 miles in 15 days, 22 hours, 41 minutes; the *fifth*, 1,030,000 miles in 79 days, 7 hours, 47 minutes; the *sixth*, being only 135,000 miles distant from the planet, and the *seventh* only 67,000, the time of their revolution in their orbit is exceedingly short.

The consequence of the orbits of these satellites making a considerable angle with the orbit of their primary, they are very seldom eclipsed or occulted; and their smallness and vast distance ren-

* The Cube of the Earth's diameter is 500,944,540,888, and that of **saturn's** 504,358,336,000,000, or rather more than one thousand times as great.

dering them invisible when the air is not clear, they are not so convenient for making observations on as those of *Jupiter*.

That the rings of *Saturn* are opaque substances is proved, not by their appearing in certain positions as a dark streak across the body of the planet, but from their casting a shadow on him; yet these rings sometimes shine with greater splendour even than the planet himself.

Saturn turns on his axis in 10 hours, 16 minutes, at the rate of 22,400 miles per hour at his equator; belts, similar to those of *Jupiter*, are frequently seen on his surface, which probably proceed from the same causes.

REFLECTIONS ON PUBLIC DIVERSIONS.

The subject of *PUBLIC DIVERSIONS* has given birth to much *sophistical argument*,* and well-meant declamation.

The man of pleasure, the devotee,† the wit, and the philosopher, have respectively viewed and treated the subject according to their own feelings, turn of mind, and knowledge of men and things.

Hence they have alternately vindicated and condemned, either with a partiality dictated by the mere love of amusement, or with the censoriousness of a contracted, gloomy, and cynical mind.‡

DIVERSIONS may be said to be of two kinds, the one tending to vice and folly, the other to health and amusement; the former should be discountenanced, and the latter encouraged.

All ages and nations have had their public amusements. In proportion as the refinements of taste and manners consequent on civilization prevail, public diversions become less savage and barbarous.

The *Olympic* and other games of *Greece*, the dreadful combats of wild beasts and gladiators,§ are now no more.

Bull-baitings and other cruel sports are now detested by all except the lowest of the vulgar; and public diversions are substituted, which, however inimical they may be, in many respects, to propriety and good manners, are far less shocking to humanity.

This, however, does not alter the nature of man; as he is at all times the same; he must be doing something, either of good or evil.

With him every hour has its duties; and that almost universal thirst after *diversion* and *unprofitable amusement* generally predominates, which leads on to idleness, luxury, and dissipation.

All those who immoderately indulge in these pleasures, become gradually enervated and reduced to a state of vassalage and ruin.

When the watchman slumbers on his post, an insidious enemy may easily obtain the honours of conquest. It was in the hour of general festivity, excess, and inebriation, that *BABYLON* gave to *ALEXANDER* the triumphs of victory.

The *Roman empire*, great and stable as it was, began to exhibit evident marks of decay, when its senators and rulers exchanged their native simplicity of manners for the pomp of luxurius elegance, the feast, the dance, and the song; and thus set the example of licentiousness before the inferior ranks of people.

While her *CONSULS*, *TRIBUNES*, and *DICTATORS*, practised

temperance, sobriety, and inflexible public virtue, she flourished, and gave laws to the world.

True greatness and honour were not then confined to palaces; they shone in the village, the cottage, and the field.

CINCINNATUS at the plough, was a far *more* praiseworthy and exalted a character, and example of usefulness and virtue, than *CÆSAR* at the *circus*, the *theatre*, or the *triumph*.

But no sooner had the governors broke through those rules on which the preservation and safety of the empire depended, than the contagion spread with irresistible violence through all the subordinate ranks of the body politic.

The freemen and plebeians* soon extended the breach their rulers had made, and followed them in every thing conducive to public ruin.

Thus it was with ancient *Greece* and *Rome*, once the glory of nations; now, in a great measure, the seats of ignorance, superstition, and slavery; and as the same causes naturally produce the same effects, there is reason to fear that every great empire will meet with the same results.

Luxury and *dissipation* is a kind of general disease, and almost epidemical. Few indeed there are who have nerve enough to retain their proper senses amidst the general delirium, so as to be perfectly free, that their examples shall shine with distinguished lustre. With what eagerness do the *gay* and *giddy* pursue pleasure in all her varying forms!

The *opera*, *theatres*, *masquerades*, *balls*, *races*, *gambling-houses*, &c., principally divide their time and their money, and constitute a perpetual round of unprofitable and often of ruinous folly.

While the great spend their time and fortunes in such a giddy round of expensive amusements, others excited by the prevalence of their example will imitate them to their ruin.

By such conduct innumerable evils have been introduced to all ranks, even to the private tradesman. Every class have caught the infection, and no sooner does one rank step out of their proper station, than the next succeeds it, and fills up the chasm.

The number of *public places of diversion* in and about the *metropolis*, have been long and justly complained of as a nuisance, as being highly prejudicial to the morals and fortunes of the people.

It is well known, that many unguarded and inexperienced youth, have been excited to commit acts of injustice to supply wants occasioned by the pursuit of expensive diversions; and proceeded from one degree of guilt to another, until the loss of liberty or life, has put a period to their crimes.

Let it be remembered, that every species of pleasure, however lawful, under proper restrictions, becomes unlawful and hurtful when immoderately indulged.

There is a fixed point at which we ought to terminate enjoyment, by retreating from the influence of its immediate cause, if we wish to preserve uninjured the facilities or organs through which that enjoyment is communicated.

When extended beyond this point, the perceptive faculties and moral powers become relaxed; our finest feelings are destroyed; a kind of listless languor ensues; and we become unfit for the exertion of that fortitude which is necessary to repel the insidious as well as open attacks of vice.

Thus a constant round of diversions, even admitting them to be innocent, enervates the mind, throws it off its proper guard, and renders it more liable to receive injurious impressions, than while

* An argument, which carries the appearance of truth, but leads a person into error.

† One extravagantly or erroneously religious; it means also a bigot in anything.

‡ Partaking of the qualities of a *Cynic* philosopher, who was remarkable for his contempt of riches, and rigorous reprobation of vice.

§ Persons who used to fight naked with swords in the public exhibitions of *Greece* and *Rome*.

* Peasantry, or labourers.

it remains protected by the rules of sober reason and inflexible virtue.

It was probably for this reason that the LACEDEMONIANS kept so strict a guard over their youth, lest by occasional indulgence the desire after and pursuit of pleasure should become habitual.

They knew the authority of reason over the passions was more easily preserved than regained when lost; and, therefore, under the government of the wise LYCURGUS, almost every species of luxury, intemperance, and vain amusement was prohibited.

It was a maxim among this sageious people, that frugality and temperance preserved the faculties of the mind free and uninterrupted, and rendered the body most fit for vigorous exertion in a regular course of useful action.

The history of past ages, the natural course of human events, and the testimony of sound reasoning on established principles, all concur to show us the folly of not keeping within the strict rules of propriety in every transaction of our lives, particularly in all public places of diversions, in which there are so many temptations.

Allured by these amusements, many may thence date their first deviations from propriety and from virtue. The love of what is called harmless recreation has drawn them to be spectators of scenes, which they fondly hoped to retreat from with undiminished innocence.

But many have been led by imperceptible gradations from pleasure to folly, and from folly into crimes which in the hours of sober reflection they would have trembled at the thought of committing.

As vice is the proper object of aversion to every rational being, all the avenues that secretly admit it ought to be guarded with the utmost caution.

And as vice is never so dangerous as when it assumes the mask of harmless pleasure, whatever tends to introduce it under that alluring form, ought to be most studiously avoided.

Depraved as human nature is, men do not suddenly become really wicked. It is by slow gradations that vice, as well as virtue, gains absolute dominion in the mind.

Let us view our public diversions in whatever light we may, they all appear hostile to morality, virtue, interest, and domestic happiness; it therefore behoves all those who have it in their power, to prevent their influence as much as possible.

It is well to remark, that we by no means wish to denounce public diversions, but to point out the improprieties and follies which are committed there; and of the danger and evils attending them.

PHILOSOPHY OF THE STREETS OF LONDON.

THE ITALIAN BOY.

The number of foreigners, chiefly from the mountains, and all from the central and southward parts of Europe that throng to the British metropolis, and drive a half-business half-begging sort of trade there, is truly astonishing, and gives one curious notions of the mode of life in those countries,—as well as of the opinion which the people there have of the wealth of John Bull, and the best means of gratifying his taste, and in that way coming in for a share of his bounty. The congregating of the nations at Astracan, is not more motley than that of these exotic ministers of

amusement, only a few of the many genera of whom are shown in the cut. In some, indeed in many, instances, those peripatetics do not come of their own accord, but are procured, it is said, by agents for regular firms in London, some of them having English managers; and the agents are said to select them on account of their trustworthiness and their dismal looks, as well of their endurance of hunger, total insensibility to the weather, and indifference to dress and every other accommodation. If these are the properties for which the agents select them, there is no doubt that those who come over as a matter of speculation endeavour to qualify themselves in a similar manner. But, as is the case with very many branches of business in London, the "great houses," of barrel organs, and monkeys, and land tortoises, and white mice, have a monopoly of the business; and though they have neither corporation laws nor patents to secure them, the total ignorance in which the little strangers are of the ways of London, and their inability to get the requisite stock in trade, prevent that free traffic in the streets, which, if the trade were opened, would go far towards putting an end to it, and would leave the thousands who are daily wandering about, at home to improve the lands of their birth.

But while one regrets to see so many young creatures come so far to spend their youth in what would, in this country, be considered so unprofitable a manner, there is much about these boys that one cannot help admiring. They come with their tune, such as it is, and their little museum of zoology; and whether as is the instrument, and few and common-place as are the animals, there is amusement to young folks in them. The grating and rattling sounds of the shattered pipes, are offensive enough, as they halt, and far under one's study windows; but when one throws down the pen, advances to scare them off with a face of as frightful anguish and indignation as the "Enraged musician," in Hogarth's picture; and first sees the monkey skipping up the lamp iron, or the pillar of the balcony, and taking his seat with all the gravity of a sage magistrate, and doffing his little cap, and scratching "the blemishes of his propensities," at the same time,—looking wiser too than half the crowd in the streets, as he mouths and chatters his little address, bending the body and nodding the head between whilst,—which address would, of course, be very complimentary—if one could understand it, it is astonishing how the muscles relax, and the sound of the music sweetens on the ear. The chance is (for newly assuaged wrath is the very hot-bed of generosity) that you have, by this time, reached the balcony, and your hungerers are fumbling in the copper "store" for one penny. But before you find it, your eye glances downward (a man never cares for looking up when he gives a penny for charity's sake), the organ-slide moves to the most softly supplicating tune on the barrel.

It is proper to reward the cause of so much joyous feeling, how discordant soever it was in its beginning; and so you shut pockets and grope the depth of sixpence. But "the eye" is still upon you; and now it constrains you to look down; and the white mouse is turning the little rundle of its captivity; and the monkey is riding majestically on the curiously trimmed poodle, like Cupid on the Lion. The mild Grecian tortoise too, which Phidias himself placed by the feet of his Venus as the emblem of gentleness, is moving its little head as if it felt the air of "Young Love," to which the slide of the organ has been shifted. Sixpence in such a case would be downright meanness, and as Cupid turns his lion round, and again shows you the symmetry of his cranium, down drops your half-crown into his little cap, and he "pays the piper" for your treat. And now the boy whose face had worn a smile all the time, but a smile of the calmest repose, looks up; and there is such gratitude in his swarthy features and

his aloe-black eyes, that you never laid out half-a-crown to so much advantage.

The boy will sleep at night on the hard boards without a truss of straw; and the monkey will lie in his bosom, and the dog on his feet to keep them warm, and his supper will be but light, and the halfcrown will be delivered up to his master with a fidelity that never errs. The boy is the servant of a master, of a hard and gripping master, who turns his gentleness and faithfulness to every profitable account, and rewards them with privation and misery; but the servant is faithful; and the sweetness of his disposition is obtaining him a connexion on his round; and he will not be long ere he is able to hire an organ, and buy a monkey; and

then he will, before the days of his boyhood are past, earn, and with the habits that he has acquired, save, as much as will secure him a return to his native village, among the sweet shades of the Appenines, as wealthy, in comparison, as the nabob that comes home with his thousands, and his diseased liver, and his haughty bearing to others. And he will obtain one of those delicious cottages that are concealed among the clustering vines, and the soft olives; where he will repair his tanks, and trim his crops, and marry one of the sunny-eyed maidens of the south;—and he will rear his family, and some of them will follow his calling, and he will bless the bounty of England on his death-bed, and go to his grave at a good old age.



SAVAGE AND SAVAGE.

How very different that boy is, in his conduct and in his fate, from the beggars of native growth. To be sure they are illegitimate beggars, and follow their trade at corners and in alleys; as they are "forbidden by law" to do it openly. But no law can prevent them; nor does it seem that any "practice" can mend their manners. Their object in begging is not that they may escape want, because all of them must have been born somewhere, and so must have a claim of right in some parish; their object is to obtain what they are unable to procure by honest industry; and that they do procure; for there will always be persons who, though well-meaning, are weak enough to believe that there is merit in the mere act of giving for nothing, whether that which is given be really productive of good or of evil.

Many of those "home-made," or, as the words are, "town-made," mendicants, (and that is one of the cases in which "town-made" is no recommendation,) are really thieves, who assume the maladies, the miseries, and the rags of beggary, with great truth and effect,—far more than *bona fide* beggars who have no other object in view could assume. In those dresses, they can prowl about, and find out where depredations can be carried on, much better and more safely than if they were in better apparel, and had no apparent necessity to be loitering about. No doubt they are, in their character of beggars, liable to be assailed by the beadle;

but they know the beat of the beadle—it is always in those places where his vigilance can be best seen by the parish officers; and as he is very frequently a man of "weight," or else one whom indolence has reduced in the world, there is not much to be dreaded from him. At worst, his only punishment of the mendicant is, with his staff and costume of office, to march him out of his own parish, as if he were recruiting beggars for the next one. This often answers the purpose of the "man of observation," better than if he were allowed to pass un molested; for under the escort of the beadle he may pass without being heeded by the very men who would take him into custody if they found him without a protector, and thus were induced to examine, and in consequence recognize him.

The Italian Boy has no such end in view, he is diligent in his calling, and when the labour of the day is at an end, he is glad to get to rest, how plain soever his resting-place may be. The wealth and enjoyments of the metropolis have no charms for him. He is in the pursuit of his calling; and as he never gets any thing till he has given what he is taught to believe is value for it, his feelings are honest, mean and wretched as is his appearance. Among the crowds of erring youngsters that are daily noticed, there are very few of these Italian boys. That fact speaks volumes.

THE
GUIDE TO KNOWLEDGE.

EDITED BY MR. W. PINNOCK,

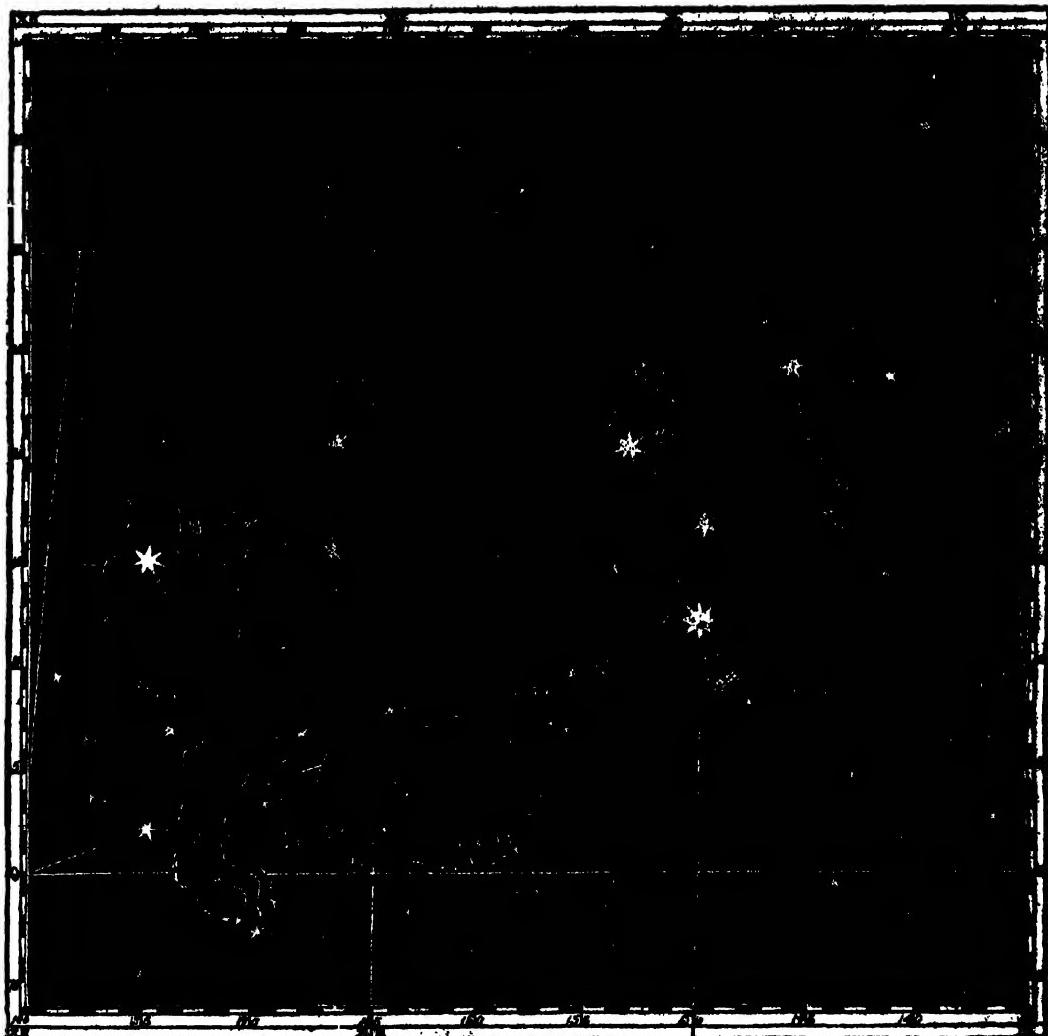
AUTHOR OF "PINNOCK'S CATECHISMS," "GRAMMAR OF GEOGRAPHY AND HISTORY," ETC. ETC.

No. XX.]

SATURDAY, OCTOBER 20, 1832.

PRICE
ONE PENNY.

THE COMET, IN CONSTELLATION LEO.



East Point of the Horizon. * 1. * 2. * 3. * 4. + 5. A. S.

MAGNITUDES.

The above engraving represents the beautiful constellation Leo, the *Lion*, and also shows a portion of the *path* of the periodical Comet discovered on the 27th of February, 1826, by M. BIELA, of Josephstadt, and which is now to be seen in the heavens, as described below.

The above Comet performs its revolution round the Sun in about six years and three quarters, and whose return in the present year has been made the subject of elaborate calculations by mathema-

ticians of the first eminence, has not disappointed the expectations of Astronomers. It is already visible in superior telescopes, and may be expected shortly to be seen in its approach to the Sun, if not by the naked eye, at least with instruments of moderate power. The reappearance of this *Comet* (the second of short period with which we are acquainted), has been looked for with anxious interest by astronomers, as likely to elucidate some of the most curious points in the constitution of our system.

ITS MOVEMENTS.—On the 12th of October it was seen in about two degrees south-west of the double star *Castor*, in the sign *Gemini*; on the 22d it will be nearly in a line with *s* and *k* in the same constellation, and nearly three and three-quarters south of *Pollux*.

The COMET marked No. 1, on the map, shows the position on the 25th of October, at two o'clock in the morning; that marked No. 2, on the 29th of October; and that marked No. 3, on the 2d of November, at half-past one in the morning.

On the 10th of November it rises E.N.E., at a quarter after nine in the evening, near 12, the most northern star in *Canis Minor*.

On the 19th it rises E.N.E., about nine in the evening, midway between, and in a line with, *12*, in *Canis Minor*, and *b* in *Cancer*, and *d* in *Hydra*.

On the 28th it rises E.N.E., about nine in the evening, near 12, the most northern star in *Canis Minor*, and *c* in *Hydra*.

The Comet will be visible in Europe on the 2d of October, when its distance will be about fifty-five millions of miles.

INSTRUCTIONS FOR DISCOVERING THE COMET, say on the 25th of October, &c.—The observer will take the map in his hand, and compare it with the heavens, at two o'clock in the morning, the time the Comet is expected to be visible to this country; for which purpose he will place his back towards the North, and by looking towards the east, he will see the constellation *Lynx*, a little above the horizon, and by observing the form of the stars on the map, and then by comparing them with those in the heavens, he will readily find the elevation of the COMET.

This is the Comet conjectured which such dire forebodings were entertained on the Continent; many individuals firmly believing that in 1832 it would come in contact with the Earth, and provoke its destruction. This alarm appears to have originated in Paris, which seems especially accessible to these terrific apprehensions.

CONJECTURES AND CONCLUSIONS RESPECTING COMETS.—Of all the celestial bodies, there are none that have given rise to so many speculations and conjectures on the COMETS. Their strange appearances, in all ages, have been a matter of terror to the vulgar, who uniformly have looked upon them as bad omens, and fore-runners of war, pestilence, &c. Others, less superstitious, supposed them to be meteors raised in the higher regions of the air.

Some part of the modern doctrine concerning them, however, was received into the ancient *Italic* and *Pythagorean schools*, for they held them to be so far of the nature of planets, that they had their periodical times of appearing; that they were out of sight for a long time, while they were carried aloft at an immense distance from the Earth, but became visible when they descended into the lower regions of the air, and thus were nearer to us.

ARISTOTLE, however, maintained, that they were nothing more than meteors, or exhalations raised into the upper regions of the atmosphere, where they blazed out for a while, and disappeared when the matter of which they were formed was consumed. SENECA, on the contrary, strongly argues against those who supposed them meteors, and declared his belief that they were not fire suddenly kindled, but the eternal productions of NATURE. He points out, also, the only way to come at a certainty on this subject; viz., by collecting a number of observations concerning their appearance, in order to discover whether they return periodically or not. "For this purpose," says he, "one age is not sufficient, but the time will come, when the nature of Comets, and their magnitudes, will be demonstrated, and the routes they take, so different from the planets, explained. Posterity will then wonder that the

preceding ages should be ignorant of matters so plain and easy to be known."

The prediction of SENECA, however, seemed, for a long time, very unlikely to be fulfilled. The great authority which ARISTOTLE maintained for many ages, determined them to be nothing but meteors, casually lighted up in the air; though they were manifestly at a great height, not only above the clouds, but subject to the diurnal revolution of the Earth. In the dark and superstitious ages, they were held to be the harbingers of *every kind of calamity*,^{*} and were supposed to have different degrees of malignity according to the shape they assumed; from whence also they were differently denominaded. Thus, some were said to be *bearded*, some *hairy*; some to represent a *beam*, a *sword*, or *spear*; others a *target*, &c.; whereas, modern astronomers acknowledge only one species of comet, and account for their different situations, and distances from the Sun, by their different declinations.

These old astronomers maintained many absurd opinions concerning comets. The first astronomer who placed them in their true situation, was TYCHO BRAHE, but the first who discovered their true motion was SIR ISAAC NEWTON, from the observations made on the great Comet of 1680. This descended almost perpendicular towards the Sun, with a prodigious velocity; moving again with a motion retarded, as much as it had been before accelerated. It was seen in the morning by a great number of astronomers in different parts of Europe, from the 4th to the 12th of November, in its way towards the Sun; and in the evening, from the 19th of December to the 9th of March, following. The many exact observations made on this Comet, enabled Sir Isaac to determine that they are a kind of planets, which move in very eccentric ellipses; and this opinion was confirmed by his established work; and further, that they are vague bodies, enlightened by the Sun.

Comets are of very different magnitudes, which may be conjectured from their apparent diameter and brightness. The TAILS of Comets have given rise to various conjectures; though it is acknowledged by all, that they depend on the Sun in some way or other, as they are always turned from him, but in what manner this is accomplished we cannot easily determine. SIR ISAAC NEWTON was of opinion, that the tail of a Comet is a very thin vapour, which the head sends out by the reason of its heat. BROWNE objects to Newton's theory, from the great velocity of the Comet's motion: that of some of the Comets is said to be after the rate of no less than 880,000 miles an hour.†

With respect to the use of the Comets in the universe, it is no more a question than that of any other Orb, except it be to show forth the works of the Almighty in a more extensive point of view. They show, by their rapid motion, and the period of the revolutions of those which have been calculated, the vast extent of the starry firmament. With respect to their situation, whether belonging to the Solar System, or as links that join Systems, thereby keeping up a harmony or union of systems, seems more a consideration, and is perfectly consistent with the analogy and connexion that are found among objects, where the researches of human sagacity have been able to penetrate.

A Comet exhibits three varieties, according to its position, as seen from the Earth. I. *Bearded*, when eastward of the Sun, and its light marches before. II. *Tailed*, when westward of the Sun,

* This idea is noticed by Homer, Tasso, and Milton, but the light of religion has diffused more perfect ideas, and exploded many superstitious notions which ignorance and heathenism had introduced.

† This is the same as Newton calculated the motion of the Comet of 1680 to be.

and the tail or train follows it. III: *Haired*, when diametrically opposite to the Sun, having the Earth between them, and all its tail hid, except a few scattered rays.

But of all the Comets on record, only four of their periods are known to any degree of certainty. The first of these appeared in 1532, 1607, and 1682, making a period of seventy-five years. The second appeared in 1532 and 1661, being a revolution of one hundred and twenty-nine years. The third, and most noted of all the Comets yet observed, is that before-mentioned, which appeared in 1680, and its period was calculated by SIR ISAAC NEWTON to be 575 years, therefore it may be expected again in 2255. This comet, at its greatest distance from the Sun, is about 11,200,000,000 miles; and at its least distance from the Sun's centre is only 49,000 miles, being only about one-third of the Sun's semi-diameter from his surface. In that part of its orbit nearest to the Sun, it flies at the amazing rate of 980,000 miles an hour, so situated above; and the Sun, as seen from it, appears forty thousand times larger than he does to us. The astonishing length that this Comet runs out into empty space, suggests to our minds the vast distance of the fixed stars, and hence of the *Uranides*, where comets appear beyond regions. However difficult to narrow mind the sun, to find out the destination of these comets, this is an unshaken truth, that wherever the Divine exerts his power there he also manifests his wisdom and goodness.

The first Comet on record was observed by MICHAEL PAPALOGO of Constantinople, in June, 1337, whose course he describes very accurately.

Comets do not move from west to east like the planets. Some have a direct and some a retrograde motion. Their orbits are not comprehended within a narrow zone of the ecliptic like those of the principal planets; they vary through all degrees of inclination. There are some whose plane is nearly coincident with that of the ecliptic, and others have their planes perpendicular to it. Indeed, a slight inclination of the orbit is no longer deemed an essential characteristic even of the planets, for the small planets lately discovered have great inclinations. It may be remarked, also, in this connexion, that the orbits of the satellites of *Uranus* are nearly perpendicular to the ecliptic.

It is further to be observed, that the *Tails* of COMETS begin to appear as the bodies approach near the Sun; their length increases with this proximity, and they do not acquire their greatest extent till after passing their perihelion. Their direction is always to the Sun.

OF THE STARRY FIRMAMENT, ITS CHIEF DIVISIONS, AND CONSTELLATIONS.

The stars, on account of their apparent magnitudes, are distributed into several classes, or orders. Those which appear largest to the eye being denominated Stars of the *first magnitude*; the next to them in lustre, Stars of the *second magnitude*; proceeding in this progressive manner to those of the *sixth magnitude*, which are the smallest that are visible to the naked eye. Those that are less than the *sixth magnitude*, are termed telescopic Stars, because not visible without the aid of that instrument.

The whole Starry Firmament contains ninety-four Constellations, and is commonly divided into three chief parts, as follows:

I. The ZODIAC, which contains twelve constellations, commonly called the twelve signs of the Zodiac. The Zodiac is sixteen degrees broad.

II. All that space between the Zodiac and the north-pole, containing the thirty-five northern constellations.

III. The regions south of the Zodiac, containing thirty-seven constellations.

A constellation is a convenient portion or number of Stars, which lie contiguous to one another, and, for the purpose of distinction, is named after some animal, or object, which if there delineated, would fill up that space, as it appears to the eye.

By this decision, the Stars are so distinguished from one another, that any particular star may be readily found in the Heavens, by means of a celestial globe, or map, on which the constellations are so delineated, that the most remarkable stars are placed in such parts of the figure as are most easily distinguished.

The magnitude of the stars in the constellations is distinguished chiefly by the letters of the Greek alphabet; that is, the first letter (*α*) is placed by the brightest star in each constellation, whether of the first magnitude or not; the second letter (*β*) is placed by the second in lustre; continuing in this manner to the last star in the constellation, and if there are more stars than there are letters in the Greek alphabet, the letters of the common alphabet are introduced; and afterwards, if necessary, the numbers, 1, 2, 3, 4, &c. are added.

Some of the stars have, besides their rays and Greek letters, also names; as *Castor*, &c. (see Map) and it is much to be regretted, that astronomers have not given modern names to all the considerable stars; that being to students so much simpler, and more engaging than the Greek letters.

OF THE CONSTELLATION LEO, THE LION.

This sign is with the moderns, as with the ancients, a symbol of the month of July, and was placed among the Egyptian hieroglyphics to represent their hot season. The Greek poets tell us this sign was the *Nemean Lion* that dropped from the Moon, and was slain by HERCULES, and was afterwards elevated to the heavens by JUNO.

This constellation is remarkable for its many bright stars, and is easily discovered by its being seated south of the *Great Bear*.

In the western part of this constellation is a beautiful star of the first magnitude, called *Regulus* or *Kelb*, near the heart of the Lion; a little above this are four bright stars forming the neck and head; on the hind quarters are two stars of the third magnitude, and in the tail a star of the second magnitude, called *Denebola*, forming a triangle with the two former.

LEO contains one star of the *first magnitude*; two of the *second*; five of the *third*; eleven of the *fourth*; fourteen of the *fifth*; and forty-three of the *sixth*. Regulus is situated on the ecliptic. This star is sometimes called *Cor Leonis* (the Lion's Heart).

The constellation LEO is chiefly situated north of the ecliptic, passing over the countries situated in the north part of the Torrid Zone, where this animal is generally found; in Zoology, it is a species of *Felis*, or cat kind, and considered the most ferocious of quadrupeds. Many extraordinary accounts are reported of the animal. (See plate).

The Stoics, a sect of ancient philosophers, believed the soul to be a composition of fire and air; that it was a part of the deity: and that it was absorbed into him after death. They held virtue to be the only source of happiness, and esteemed all persons as madmen who did not live according to its dictates. They were called Stoicks from *stoa*, a spacious portico in Athens, in which they were used to dispute. Zeno, the founder of this sect, compared logic to a closed fist, and rhetoric to an open hand.

THE WONDERS OF ANIMATED NATURE.



BUFFALO, AND ABYSSINIAN COW.

OF THE BUFFALO.

THE BUFFALO, in figure and disposition, is very similar to the Ox, yet there are no two quadrupeds more distinct, or which have a greater aversion to each other. They are of a different species; but, like the Ox kind, are greatly diversified in size and form: in general, however, they are much larger, and in a wild state much more formidable, and there is no method of escaping their pursuit but by climbing some large tree; a moderate size would be no security, for this they readily break down, and many travellers have been instantly gored to death, and afterwards trampled on, at the same time mangling their bodies in a most shocking manner. When tamed, they are more useful in carrying and drawing burdens than oxen. Though these animals are chiefly found in the torrid zone, they are nevertheless bred in Europe, particularly in Italy; into which country they appear to have been introduced about the year 600. Compared with the cow, the figure of the Buffalo is much more clumsy, and its air is more savage. The flesh is less palatable, and the milk less nutritive, though yielded in sufficient abundance. In a wild state, they run with surprising speed, and cross the largest rivers with the greatest ease. The method which the hunters adopt to destroy them, is to fire upon them from the thickest trees; although they are so wild in a state of nature, there is no animal in the world more easily tamed; and though they are never quite so docile as the Ox, yet they are patient, persevering, and have a greater share of strength. The chief use of these animals is to draw heavy weights. They are usually guided by a ring run through the nose, and then yoked to a wagon in pairs. Their strength is so far superior to that of the horse,

that two Buffaloes will draw more than four horses. Although the *BUFFALO* is, at the present time, common in *Greece* and *Italy*, it was neither known by the Greeks nor Romans; for it never had a name in the language of those people. The hide of the Buffalo is very valuable, and the leather made from it is much esteemed for its smoothness, impenetrability, and duration, qualities which render it excellent for harness.

Of the *ABYSSINIAN* Cow nothing is remarkable, except its horns, which are of a prodigious size, and are capable of holding from *ten* to *twelve* quarts each. The animal itself is much less than the English cow; hence it will be observed, that its horns are out of all proportion. The horns of one of these animals are in the *Museum* of the College of Surgeons, in London. They are, however, by no means common, being brought by the salt caravans, as valuable presents from the south. As the animals of Abyssinia are among the most remarkable in the world, we shall return to them in some future number.

Those who sell offices sell the most sacred things in the world, even justice itself, public property, the people, and the laws.—*Laberius*.

Such as have virtue always in their mouth, and neglect it in practice, are like a harp, which emits a sound pleasing to others while itself is insensible of the music.—*Diogenes*.

A soul conversant with virtue resembles a fountain; for it is clear and gentle, and sweet and communicative, and rich, and harmless, and innocent.—*Epicetus*.

BRITISH MANUFACTURES.—IV.

CLOCK-MAKING.

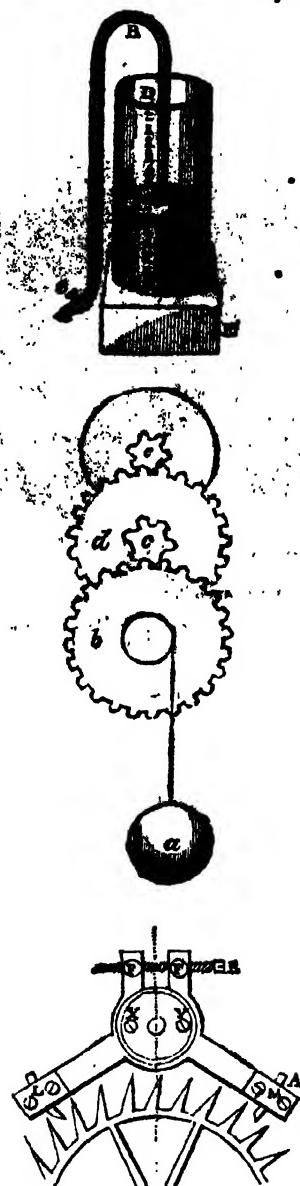
The first clock-makers were not natives of our own soil, though the ingenuity of British manufacturers has tended very materially towards the high state of perfection which this art has attained. The "gnomon," which subsequent improvements have converted into a sun-dial, was probably one of the earliest instruments employed in the measurement of time. Indeed, the progress of a tree's shadow, a phenomenon which must have been open to the observation of all, might have served as a tolerably accurate substitute for that instrument; and it may very reasonably be concluded, that the vast altitude of the Egyptian Pyramids formed part of a design for representing the wide dominion of the living monarch, by the shadow thrown from his mausoleum when dead.

The dial of Ahaz may be adduced as one of the earliest instruments for the measuring of time upon record; and as King Ahaz lived about seven hundred and fifty years prior to the Christian era, it will be evident that the antiquity of the sun-dial is much greater than that of the water-clock, which certainly belonged to a much later period. The first sun-dial employed at Rome, was placed near the temple of Quirinus, by Papirius Cursor, the Roman general, a. c. 293; prior to which period, it appears, there was ~~no mode of calculating the intermediate points~~ no mode of calculating the intermediate points of time which occurred in the calendar, but what was furnished by the sun's rising and setting. Soon after this period the sun-dial became a great favourite with the Roman people, and large sums were offered for instruments of this description. But it will be apparent, that however useful the ancient gnomon might have been considered, as a coarse measure of time, it could never have been very generally adopted in those climates in which the atmosphere did not admit of frequent observation. Accordingly, we find that the clepsydra, or water-clock, was employed at a very early period; and Vitruvius states, that they were much improved by Ctesibius, of Alexandria. At first, the time was indicated in these instruments by the gradual dropping of water from an elevated vessel, or reservoir, to a receiver beneath; and the reservoir being graduated, the empty part showed the number of hours that had elapsed since it was replenished. It was, however, soon discovered, that the water would not run equably, as a greater quantity must pass out in any given time when the vessel was full, than after it was emptied of a portion of its contents. A reference to the nature of hydrostatic pressure will sufficiently account for this fact, as it is invariably found that the supply of water from a cistern depends upon the height of the column above the aperture. This irregularity in the dropping presented an obstacle which it required much ingenuity to correct; and although a variety of attempts were made to suit the graduated scale to the efflux, it still remained but a very imperfect instrument. A better acquaintance with the laws of hydrostatics has now, however, suggested a mode of effecting a division of the vessel, which it may be advisable to apply to this primeval instrument.

It is found that the velocity with which water-spouts from the same-sized aperture, furnished with a variable reservoir, is as the square-root of the height of the surface. Thus, if a glass vessel be taken, out of which all the water will flow through an opening regulated for the purpose, in exactly twelve hours, the whole height must be divided into the square of 12, or 144 equal parts. Of these $11 + 11$, or 121, must be measured from the bottom, to find the hour of eleven; $10 + 10$, or 100, from the bottom, will give the division for ten o'clock; $9 + 9$, or 81, the hour of nine;

and so on continually, taking the square of the hour to be graduated.

We may now, however, examine the construction of a vessel exhibited by Mr. Partington, at the National Repository, and of which a figure is attached. It consists of a cylindrical vessel **B**,



supported by a base **D**. The vessel being filled with water, a float and syphon **a b c**, is placed on the surface, and the air being withdrawn by applying the lips at **c**, the water begins to flow over in a continuous stream. The float will thus sink equably down the cylindrical vessel, and exactly indicate the hour.

The earliest complete clock, moved by weights, of which there is any certain record, was constructed early in the thirteenth century. It was constructed by a Saracen mechanic, who received about two thousand pounds for his ingenuity. This clock is stated to have kept time very accurately; and it was afterwards presented to

the emperor, Frederic II., by the Sultan of Egypt, under whose direction it was made. Some time after this period, a clock was placed in a small building, erected for the purpose, in the city of Westminster, the expense of which was defrayed by a fine imposed on one of the judges for malversation in his office. In the fourteenth century, an artist, named James Dondi, constructed a clock for the city of Padua, which was long considered as the wonder of that period. Besides indicating the hours, it represented the motion of the sun, moon, and planets, and also pointed out the different festivals of the year. On this account Dondi obtained the surname of Horologio.

The manufacture of clocks appears to have been introduced into England during the reign of Edward III., as that monarch, in the year 1368, invited three Dutch arlogiers from Delft, for the express purpose of benefitting his subjects by a knowledge of the art. But the oldest clock extant in this country towards the close of the last century, was made in the reign of Henry VIII. It was honoured by a place in the royal palace at Hampton, and was so constructed as to represent the motions of the heavenly bodies.

The principle on which a common clock is constructed will readily be understood, by turning to the diagram of a train of wheels, in the centre of the engraving. The lowest wheel, with ninety-six teeth, has power communicated by a cord passing round its cylindrical axis, or barrel, which usually makes two revolutions each day. The teeth of this wheel actuates a smaller wheel, or pinion, of eight teeth, so that we shall thus have twelve revolutions of the second wheel, which answers to the twelve hours in the day, for one of the first. The wheel beyond is called the escape-wheel, and is shown with the pallets, in the next engraving.

The entire performance of the clock depends on the escapement, or rather on the pendulum which it actuates. The pallets L M, are made to oscillate to the right and left alternately, by the teeth of the wheel. They are, in a perfect clock, made to open and shut by the screw N, in the holes P Q. If a pendulum, about thirty-nine inches in length be employed, the clock will move forward one second each vibration. If it be longer the clock will go slower, and if shorter, then it will go faster. So that to regulate the clock we have only to screw or unscrew the pendulum to ensure accuracy in its movements. Now, as all metals expand by heat, and contract by cold, it will be obvious that clocks provided with simple metallic bars, must be continually varying in their time, and the apparatus usually resorted to by clock-makers, to correct this evil, is so complicated as to be more costly than the clock itself. The author of the present paper cannot conclude his brief essay without stating that he has a pendulum, which any carpenter can make, and which keeps accurate time. *It cost only fourpence, and is made of dry deal wood.*

CHRONOLOGY.

CHRONOLOGY is the art of measuring TIME, and explains the various methods of computing it. By chronology we are enabled to ascertain the rise and fall of nations, and the periods in which events have happened, and in which men of eminence have flourished.

CHRONOLOGY has been justly called the eye and soul of history, for without chronology, History would be but of little value. It derives its name from two Greek words, viz., *chronos*, time, and *logos*, a word or discourse.

The principle divisions of time are into *centuries*, *year.*, *months*,

weeks, days, hours, minutes, and seconds; but the chief is the *year*, which is measured by the revolution of the *earth* in her orbit round the *sun*, and contains 365 days, 5 hours, 48 minutes, and 49 seconds.

Persons unaccustomed to think much on chronological matters, can have but a faint idea of the difficulties men had to encounter in adjusting the divisions of time, so as to make them correspond accurately with the motions of the heavenly bodies, the change of the seasons, the vicissitudes of day and night, and of a variety of other things connected with it. Living in an age when all these things are calculated with great nicety, and when books are annually published which afford every information that can be desired on the subject, they consider the hours, days, months, years, cycles, ages, &c., as mere matters of course, and wonder how it is that learned men find it difficult, if not wholly impossible, to ascertain with precision the real periods at which important events happened in ancient times, especially, when the historians have given the dates according to the chronology of their respective nations.

But if we sincerely reflect on this subject, we shall find that the first attempts at adjusting chronology, and registering the course of time, must have been attended with difficulties almost insuperable. No doubt, but the most obvious method was, that of observing the motions of the *sun* and *moon*. Yet, when we recollect how many ages must have passed from the creation, before men could have acquired a sufficient knowledge of astronomy to enable them to calculate these motions with any tolerable accuracy, we must be satisfied, that the divisions of time in use among the early inhabitants of the world must have been very inaccurate, and occasion, in the course of a long period, the most inextricable confusion.

The most obvious division of time is into days, and, no doubt, these were first reckoned from *sun-rise* to *sun-set*; yet this was soon found insufficient for the purpose of determining the return of the seasons, and of perpetuating the date of any remarkable transactions; nor was the institution of weeks of seven days each, appointed by God himself, as commemorative of the creation, more conducive to those purposes. The motions of the *Moon* were, therefore, at first observed for the purposes of reckoning the progress of time, and of fixing the date of any extraordinary event. That of the *earth* round the *sun*, or, as it was then imagined, of the *sun* round the *earth*, afforded the means of making that larger division which is called a year.

Yet, even with these assistances, CHRONOLOGY was, in the early ages of the world, exceedingly imperfect. Mankind were not sufficiently advanced in scientific knowledge to calculate the periods of these luminaries with accuracy, or to adjust them to each other. Their attempts served merely to involve them in inextricable confusion; for, not being able to ascertain exactly the moment when the *sun* returned to the same point of the heavens, or the exact conclusion of the year, in the course of a number of years, the error of their calculation must have been obvious, and the seasons must have ceased to correspond with the time at which they might be expected to return. That this was the case is plain from the practice of the early historians: they attempt not, in general, to fix any more precise date for the transactions they record, than the reign of the king in whose days they took place; and they reckon distance of time, not by the number of years, but the number of regus, a most imperfect method, which can afford but little information that can be depended on.

It was not until the reign of PTOLEMY PHILADELPHUS, about two hundred and forty years before CHRIST, that CHRONOLOGY began to be studied on fixed and accurate principles; this monarch caused learned men to compare and correct the dates of OLYM-

PIADS, the kings of SPARTA, and the succession of the *Priestesses* of JUNO, at Argos. It is probable that their labours would have been greatly abridged, and their purpose facilitated, by the Egyptian records, which had been kept with greater accuracy than those of most other nations, had they not been destroyed by CAMPYSES,* when he overran and conquered EGYPT.

Although the GREEKS reckoned time by *Olympiads*, or periods of four years, the exact era of their institution is not known. Some historians assert, that the *Olympic games*, from whence they took their rise, were instituted as early as 1453 B. C., while others bring the date down to 1222; with such a discrepancy, the chronology of the early Greeks could not have been very accurate.

The record of events among the ancient ROMANS was still more uncertain than that of the GREEKS, as their archives† were destroyed by the GAULS, B. C. 338; so that the historians who wrote of their affairs previous to that catastrophe, were obliged to obtain their information from the *Greeks*.

During the barbarous ages, the rest of Europe had no chronology; indeed, many of its nations had not the use of letters. But, when learning began to make progress among them, many eminent men exerted themselves to form a system, which might elucidate the facts of history, and refer them to the true era in which they happened. This was a work of no small difficulty; and in spite of the learning, the indefatigable diligence, and the extensive researches of many who devoted themselves to this service, it has been found impossible to perform it in a perfectly satisfactory manner. Much good has undoubtedly been done; many discoveries have been made, and their correctness satisfactorily proved; but the eras of many important events cannot be positively fixed, but must rest merely on conjecture, all certainty being swallowed up in the lapse of ages.

Among the many eminent persons who have made chronology their study, SIR ISAAC NEWTON occupies a distinguished place. He says, "That the *Egyptians*, *Greeks*, and *Latins*, reckoned by the reigns of their kings, which they considered equal to generations of men; or, on an average, thirty-three years each: but this loose method of reckoning was liable to be extremely erroneous, and would afford but little assurance of the correctness of their data." By this method, he calculates, that the *Argonautic Expedition* took place 907 years B. C.; but there is nothing to assure us that there may not be a mistake of many years in this calculation.

So wide are the discrepancies in the chronological calculations of those who have attempted to settle the dates of transactions recorded by the ancient historians, that little reliance can be placed on the tables they have framed. There are said to be no less than ten different opinions extant respecting the time of our Saviour's birth, generally calculated by the era of the *foundation of Rome*, taken as a *datum*, and the extreme difference is no less than ninety-one years.

(To be continued.)

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Why should I be angry with a man who tumbles on me blind-fold? In effect most of our quarrels are of our own making, either by mistake or by aggravation.

He who finds pleasure in vice, and pain in virtue, is a novice in both.

* Cambyses, King of Persia, was the son of Cyrus the Great, whom he succeeded, B. C. 529.

† Archives (pronounced ar-kives), the places wherein ancient records or manuscripts are preserved. Figuratively, the records and manuscripts themselves.

Each of us is not born for himself alone; but our country claims one part of our birth, our parents another, and our friends the remaining part.—*Plato*.

He who understands his own heart has the key to all others.

ENTOMOLOGY.

BUTTERFLIES. Order—LEPIDOPTERA.

BUTTERFLIES possess charms both for infancy and age. The first lesson a child gets in Natural History is when it catches a butterfly; and this is done almost as soon as it can walk. Buttercups and butterflies are the first objects of infantine ambition, and the taste thus acquired is seldom destroyed by the after cares of life. The old man, tottering on the verge of being, when his dim sight can perceive little besides, seldom fails to catch their flitting beauties, and as his flattened eye-balls endeavour to track their devious course, past joys irradiate his capacious memory, and future solemnities chasten his retrospective pleasures; for, with the glimpse of boyish days, which the passing butterfly unveils, he also penetrates the deep obscure of a coming eternity—he sees an emblem of the resurrection.

The butterfly has always been regarded as a striking image of our final triumph over death:—born from a grovelling caterpillar, at its change, it seems to burst from the tomb, like the resurrection of the human spirit, to a better and more enduring destination. The ancients, unaided by Christian revelation, were of this opinion; they placed a butterfly at the head of their grave-stones, as an image of their Psyche—the everlasting soul; thereby intimating that it would again appear, to flourish in “immortal youth,” in a new and sinless region.

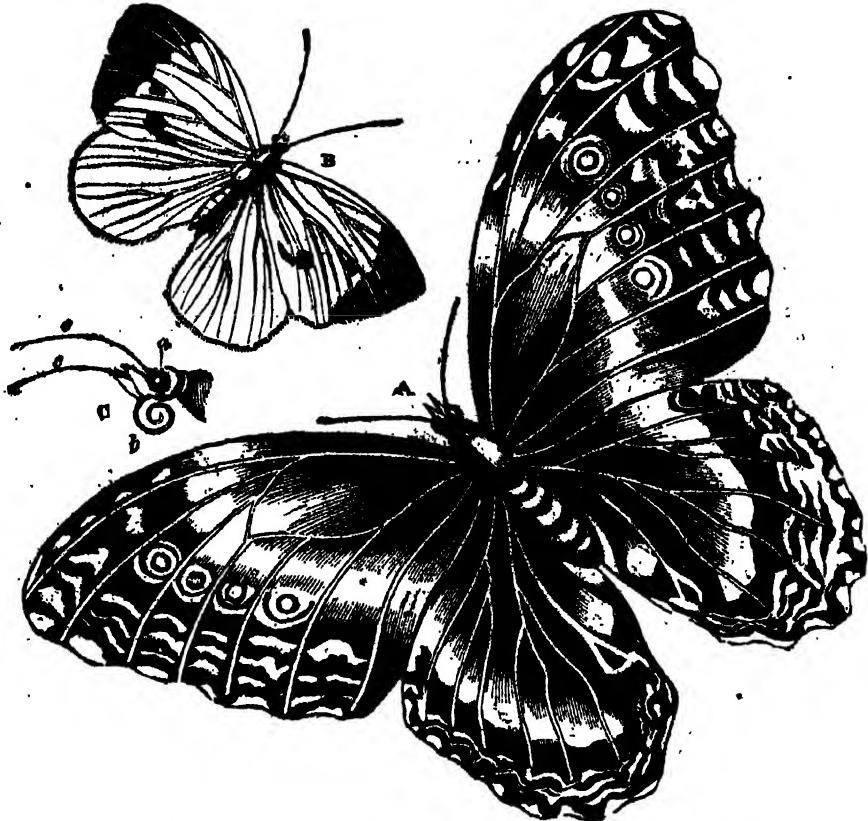
But apart from such associations, butterflies excite our curiosity, and command our admiration by their consummate beauty, gentle habits, delicate appetites, and light aerial motion. Mrs. Trollope, speaking of the summer charms of North America, says, “In a bright day, during any of the summer months, your walk is through an atmosphere of butterflies, so gaudy in hue, and so varied in form, that I often thought they looked like flowers on the wing. Some of them are very large, measuring three or four inches across the wings; but many, and I think the most beautiful, are smaller than ours. Some have wings of the most dainty lavender colour, and bodies of black; others are fawn and rose colour; and others again, orange and bright blue. Their gay and noiseless movement as they glance through the air, crossing each other in chequered maze, is very beautiful.” It is in sweet accordance with these real charms that butterflies seem to be the mildest creatures in existence; gentle, but not insipid, they interest the better feelings of the heart; and these are still further heightened, when, as we watch them quietly sipping the pure nectar of odorous flowers, the shadow of a passing cloud disturbs the feast, when—flash, they vanish from the regretting sight, with all the swiftness of the departing sunbeam.

South America produces larger and more gorgeously coloured butterflies than any other country. The *PAPILIO MENELAUS* (A) is considered to be the largest and finest of the whole tribe, and in the Brazils, glitters with peculiar beauty among the wild luxuriance of the fields. Linnæus observes, “that there is scarcely any thing in nature that for brightness and splendour can be paralleled with the colour of its wings; it is a kind of rich ultramarine, that vies with the deepest and purest azure of the sky; and what must cause a striking contrast in flight, the under surface of the wings

s as dull and dark as the upper is brilliant, so that one can conceive this animal to appear like a planet in full radiance, or under eclipse, as its wings open and shut in the blaze of a tropical sun.”*

Butterflies are so numerous that many systems have been invented for their classification, but the best for popular purposes is that contrived by Linneus, an account of which, with figures, we shall give in our future numbers.

The order *Lepidoptera*, to which our interesting butterflies belong, consists of insects with four wings, which are always clothed with fine scales, or feathers; a tongue or sucker, coiled up under the head; and the body hairy. This order was divided by Linneus into three genera;—the butterflies; sphinxes, or hawk-moths; and moths. The generic character depends on the form of the antennæ and wings. Thus, in the butterfly (*papilio*), the an-



A The great blue butterfly of South America (*papilio Menelaus*), HALF THE NATURAL SIZE.

B The common cabbage butterfly (*papilio brassicae*), NATURAL SIZE.

C The head of the cabbage butterfly, MAGNIFIED—*a*, the eye; *b*, the sucker; *c c*, the antennæ.

tænnæ are elevated, or club-shaped; that is, they have a lump at the end. The wings, when at rest, stand upright. All insects, possessing these characters, are true butterflies. Butterflies also fly only in the day time. The young student should verify these observations for himself, and to enable him to do so without difficulty, we have given, at the head of this article, a figure of the common cabbage-butterfly, with the necessary letters of reference. He should also give his best attention to the following circumstances, which, in different degrees, characterize every butterfly.

I.—THE WINGS, viewed in relation to the insect's mode of flying, and the objects which it is accustomed to visit; their colour, clothing, strength, &c., &c.

II.—THE ORGANS OF SENSATION, their relative situation, and adaptation to the creature's wants.

III.—THE INSTINCT, which regulates its choice of food, climate, &c.; but especially as it regards the deposition of its eggs, which are always placed in situations the most safe, and the most likely to furnish food to the young caterpillar.

IV.—These things should always be combined with an investigation of the uses of the animal in creation; indeed, the real secret of being a true naturalist, consists in habitually working out the question—“what is the use of this or that being,—what are the ends of their creation?”

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Glasgow	Finlay	York	Deighton & Shillito
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* Kirby and Spence, iii., p. 650.

THE GUIDE TO KNOWLEDGE.

EDITED BY MR. W. PINNOCK.

AUTHOR OF "PINNOCK'S CATECHISMS," "GRAMMAR OF GEOGRAPHY AND HISTORY," ETC., ETC.

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LIFE OF SIR WALTER SCOTT.



SIR WALTER SCOTT IN THE ARMOURY AT ABBOTSIORD.

WITHIN a few years some of the brightest ornaments of the literary world have bid adieu to time, and all sublunary joys and sorrows; and biography has been busy in gratifying the curiosity of their admirers, by giving interesting details of the incidents of their private life, of their undisguised opinions of men and things, of their habits and dispositions, and of the motives by which they were induced to undertake works which have fixed their fame on an eternal basis.

It is the painful duty of Biography, in describing man as he is to pourtray impartially his errors and his faults, as well as his beauties and excellencies. He, who, from an undue partiality to the deceased, omits or glosses over traits of character which tend to lessen our admiration or approbation of the illustrious dead, resembles the painter, who, in drawing a portrait, copies only such features as are of a pleasing character and so modifies those that are disagreeable and deformed, that they shall bear little or no

[Oct. 27,

resemblance to the original; such a picture is not a portrait, but a flattering caricature, if we may be allowed this use of the term.

To the biographers of SIR WALTER SCOTT no such painful duty is allotted. Making allowance for some few traits of human frailty, his whole life presents matter for panegyric. His conduct was so correct, his principles were so honourable, his temper was so gentle and amiable, and his mind so generous and benevolent, that the grateful task of speaking his praises is never interrupted by one of an opposite nature. Could his blessed spirit look down from the regions of bliss, and witness the sincerity, and universality of the regret for his loss, the unanimous testimony that is borne to both his public and private worth, and the sympathy which is evinced for the family he has left, who are not only deprived of a much loved and honoured relative, but plunged by his unmerited misfortunes into a state of comparative indigence, it would add, if possible, even to the happiness of heaven.

If had not SIR WALTER SCOTT formed for himself a name infinitely superior to that derived from nobility, he might have justly prided himself on his descent, as he could reckon amongst his ancestors the high and mighty of the land. But such adventitious dignity he needs not to render him immortal. His memory will be coupled with his literary fame, and not with that of his great and warlike forefathers. Truly has it been asserted that he stands unrivalled among authors, for having produced so many voluminous works without a fulling-off, and without having caused an abatement of the interest felt by the public for them. Single works of superior merit may have issued from the pens of some of his predecessors, but none have kept up a series, both in poetry and prose, so uniformly excellent as those of SIR WALTER SCOTT.

Hence, every circumstance connected with the life of a man so extraordinary, becomes universally interesting, especially after the oblivious curtain has dropped before the last scene of mortal existence, and closed the object of our admiration for ever from our view. Memory then dwells with melancholy pleasure on the fading images that sit over the mind, and present remembrances of one whom we behold no more, and of whom we may never see an equal.

SIR WALTER SCOTT was truly such an extraordinary man; his brilliant course has been gloriously published; he is gone down to the tomb; but his genius shines in his works, adds fresh lustre to the name of Caledonia, and replenishes with new light the luminous regions of literature throughout the civilized world—gone! but never to be forgotten; the current of time will carry his fame to every succeeding generation, and posterity will inscribe his name among those whom death has made immortal.

This distinguished poet, philosopher, and novelist, was born at Edinburgh, on the 15th of August, 1771. He was the third son of MR. WALTER SCOTT, Writer to the Signet, who had five other sons, and one daughter. The mother of SIR WALTER SCOTT was the daughter of DR. JOHN RUTHERFORD, Professor of Medicine in the University of Edinburgh, who gained considerable reputation by his skill and ingenuity in the medical and chemical sciences. ANN RUTHERFORD, the daughter, was educated at Edinburgh; and to the diligent instructions she received from her governess, a reduced gentlewoman, added the advantage of good natural intellectual endowments.

Mr. Walter Scott, the father of SIR WALTER, was more a man of business than of shining talents; his integrity, sincerity, and benevolence of disposition, however, gained honour and respect, not only in his professional capacity, but also in general estimation, and for a long time he held the situation of an ELDER in the Church of Old Grey Friars, where DR. ROBERTSON and DR. ERSKINE were the officiating ministers.

From his mother SIR WALTER is supposed to have imbibed an early taste for composition and poetical fancy; she being much attached to performances of the kind, and in the provincial style is accounted to have sometimes exercised her pen; but, however this may be, it is manifest, that her son was largely endowed with the genuine impressions of the Muses, and that these impressions were fostered and improved by intercourse with such men as ALLAN RAMSAY, BLACKLOCK, and other poetical geniuses of his native country.

The house in which SIR WALTER SCOTT was born, stood at the head of a narrow passage, called the College Wynd, leading from the Cowgate to the gate of the College. It was pulled down to make room for the buildings of the new College: but, his father had removed soon after Sir Walter's birth, to George's square, and afterwards sent his son, on account of his delicate state of health, to reside at Sandyknowe, with his paternal grandfather.

It is not a little remarkable that the same day, of the same year, August 15th, 1771, gave birth to two of the most celebrated men that the world has ever seen; namely, NAPOLEON BONAPARTE and SIR WALTER SCOTT, though their celebrity arose from different causes; and, what is further remarkable is, that the parents of both were of the legal profession, and both appear, from their earliest youth, to have evinced a predilection for military pursuits. Happily for the world, a military career was out of the question for Scott, as, in consequence of an unlucky fall in his infancy, occasioned by the carelessness of his nurse, his right foot was so injured that he became lame for life, his activity and liveliness, among his playmates and schoolfellows, was nevertheless remarkable, and he was not less sprightly and mischievous than any of the wildest urchins among them.

SIR WALTER's first instructor was DR. ADAM, of the High School, Edinburgh; what progress he made under that gentleman is not certain, but it has been asserted, that his industry and learning were never remarkably conspicuous. He seems to have loved story and romance more than classical study, and to have sought traditions of martial exploits, and legendary tales of his country, instead of acquiring the knowledge of the languages of Greece and Rome. Although superficial observers could perceive no indications of that talent, which in after-life shone with such lustre, there were some, and amongst them, the poet BURNS, who saw that the boy was possessed of no ordinary genius, and that he would one day be a great and popular character; and this spark of intellect, which was visible to the kindred perception of Burns, was destined to become a meteor of magnitude and splendour, such as had never before blazed in that northern clime.) He, himself asserts, that he was distinguished amongst his schoolfellows as an inventor and writer of tales, which afforded them infinite amusement, but brought on himself frequent disgraces and castigations, for the neglect it occasioned of more serious studies. It appears, that his mind was too imaginative and romantic to relish the drudgery of committing grammatical rules to memory, and inaking himself master merely of the words and construction of the learned languages, though he had the keenest relish for the beauties and sublimities of the Greek and Latin writers.

If SIR WALTER had been free from lameness, it is probable that his early propensities for the history of martial deeds would ultimately have led him into the imitation of those actions he so much admired, and that he would have become a soldier, to which it is asserted the bent of his inclination was directed; but accident had ordered otherwise, and he was destined to pourtray in imagination, that which his ardour might have impelled him to perform in reality, had opportunity offered.

In his juvenile days, he seems to have been a living emblem of

the country that gave him birth, eternally and seemingly barren, but rich in the profundity of a mind that, like the surface of a sterile hill, contains within it an ore of inestimable value; there was little on the surface either personally or mentally to excite any favourable prepossessions. Like the celebrated Dr. JOHNSON, he had no ear for music, and in many things he resembled that great man, exempting particularly the cynic severity of that accomplished scholar; for, throughout his life, SIR WALTER appears in the amiable character of a candid, if not a kind censor of other men's works and performances.

As lameness incapacitated him from being a soldier, his destination was the Bar; but ere he had made much progress in the study of the law, an accident gave a different turn to his views, although he did not wholly give up the pursuit of that profession until long after. Having had the misfortune (as it then appeared) to break a blood vessel, he was confined to his bed for many weeks: conversation was prohibited, and no other recreation than reading allowed. The volumes he perused were of such a nature as nourished his predilection for poetry and romance; and, during his long confinement previous to the restoration of his health, he had devoured so many tales and romances, old plays, epic poems, histories, memoirs, travels, and voyages, with which the circulating library of ALEXANDER RAMSAY was well supplied, and to which he daily applied, together by the help of a wonderfully retentive memory, all which, not only gave him a strong predilection for works of fiction, but also furnished him with stores, on which to draw for his future composition.

At sixteen years of age, and upon the establishment of his health, he resumed his legal studies, but not with that energy which was likely to promote his success in the profession. Whilst his eyes were fixed on the learned tomes before him, his mind was frequently making excursions into the regions of imagination; and when by an effort he recalled it to the important business he had in hand, his attention was constrained, and his application not severe.

In 1792, in the 22d year* of his age, SIR WALTER was called to the Bar. Our young advocate had now entered upon a new and very different course of life, from school-boy rules, romantic rambles, and fictitious stories, he had to divert his mind to the maxims of the law, the practice of a court of justice, and the prescribed forms and rules for the administration of civil and criminal jurisprudence.

No doubt, the experience acquired in his father's office had given him the materials for this purpose, but without the art and ability to set off these qualifications to advantage; by eloquence and assurance no candidate for forensic precedence ever yet succeeded. Mr. Scott was not a fascinating, though a sensible orator, and, relying on his easy circumstances and unincumbered condition, he was not, perhaps, very anxious about the increase of his business; unlike his venerable namesake, who, by superior industry and application, ascended to the pinnacle of his profession, our juvenile barrister did not of necessity put on the *veris scripturam*, although nothing at this time gave any indications of a change in his pursuits.

In 1797, SIR WALTER married a MISS CARPENTER,† a lady of French extraction, whose charms and conjugal tenderness and

* Some Biographers have entered copiously into the genealogical descent of SIR WALTER, evidently to prove his patrician pedigree, both from his paternal and maternal forefathers, but this, our readers will agree with us, is altogether a work of supererogation. Sir Walter Scott wants not the boast of ancestors to elevate his name and reputation; his individual merits eclipse the brightest splendours of family distinctions, and would dazzle the keenest eye that dared to look on the defects (if any there were) in his lineage.

† This lady was the daughter of Mr. Carpenter, a French refugee,

affection, contributed greatly to the happiness of the Poet's life.

Mr. SCOTT practised at the Bar for some years with considerable success, and rendered himself so acceptable to the ruling powers, by his zeal and activity as a member of the volunteer corps, that he was appointed *Sheriff-depute* of Selkirkshire, in 1799, with a salary of 300*l.* per annum. On receiving this appointment he removed to *Ashiestiel*, on the Tweed, where he continued principally to reside until he removed to *Abbotsford*. In 1805, Mr. SCOTT was nominated one of the Clerks of Session, with a salary of 1200*l.* per annum, on condition that he performed the duty without emolument during the life of Mr. HUME, his predecessor; this he did for upwards of five years.

During the time that this celebrated man practised at the Bar, he found leisure to cultivate the Muses; and, though his first attempts were translations from the German, and minor poems, he soon began to take bolder flights. True it is, that his "*Minstrelsy of the Scottish Border*" was not wholly original; but the talent he displayed in altering and adapting the rude and imperfect ballads of ancient times to the delicacy of modern years, and the learned and interesting notes which he added for the illustration of the text, rendered the performance so pleasing, that it was received with universal approbation, and encouraged the writer to still greater efforts.

SIR WALTER's practice at the Bar, which was never very extensive, had for some time past been given up by him, and, consequently, being disengaged from the labours of a legal profession, leisure gave the opportunity, and inclination prompted him on, to pursue that literary course which has gilded his memory with a splendid fame, such as seldom falls to the lot of humanity.

Prodigies, as the narrative of his life evinces, was not attendant on SIR WALTER's early days, but his memory was remarkably retentive, and many instances are related by himself and others, of the amazing displays which he frequently exhibited of this faculty, by the repetition of songs, and verses, which he had heard sung or recited but once, or which he had read only once or twice. His genius was late in development, but steady and strong in the growth, an acorn in embryo, an oak in age.)

Domestic felicity, affluent circumstances, and a delightful abode, made this the happiest period of his life, during which he was composing most of those works that have immortalized his name. His visitants were mostly of the distinguished kind, either for learning or station in society, and the general estimation in which he was held by all, might have satisfied a far more restless disposition.

By his marriage Sir Walter had two sons, and two daughters; the elder son, *Walter*, entered the army some years ago, and married a Miss JOBSON, a lady possessed of considerable property, as well as accomplishments. The elder daughter, SOPHIA CHARLOTTE, married in 1820, to MR. LOCKHART, Advocate. CHARLES, the younger son, attached to the Embassy to the King of the Two Sicilies, and ANN, the younger daughter, are supposed to be yet unmarried. Lady SCOTT, wife of SIR WALTER SCOTT, and mother of these children, expired May 15th, 1826.

Before we come to the more tragical part of Sir Walter's history, his troubles, pecuniary embarrassments, and death, we may mention most of his writings, taking them nearly in the order in which they were issued to the world; for their value and excellency, we must refer the readers of these memoirs to the works themselves,

of the city of Lyons; but Sir Walter did not obtain her hand until a long correspondence had gained the consent of her guardian, Lord Downshire. With her came an annuity of 400*l.* a-year, which the marriage did not affect.

criticism being no part of our design; the labour, we should say the pleasure, of investigating these performances, will not be regretted by those who peruse them; and, if they, who do so, have no taste for their task at first, they will assuredly acquire one before they come to the end.

SIR WALTER's first attempts were some translations from *Goethe*, and other German authors; but many of his youthful effusions never reached the press, and some others that did reach that ordeal were mercilessly treated by the critics, or neglected by the public. Ballads were his first original compositions; "Glenfinlas," "The Eve of St. John," "Smailholm Tower," &c., were the fanciful emanations of his juvenile muse. Having thus tried his wings in short

excursive flights, our author determined to soar into the higher regions of poetry, and lofty indeed was the flight.

THE LAY OF THE LAST MINSTREL

made its appearance, and its striking originality, its daring boldness, and the astonishing vigour of its style, rendered the work so popular, that 30,000 copies were sold in two years. Hence, it may be considered, that "The Lay of the Last Minstrel" was properly the first bark that MR. SCOTT launched from the slips of his poetical dock, but the vessel having floated so gallantly to the ocean of public applause, and having returned from her voyage with a gain of 600*l.*, it is no wonder but this successful expedition



ABROISFORD.

excited a thirst for further adventures, and made our author desirous of proceeding in a speculation so promising, and in adventures so auspiciously undertaken, well might he exclaim, as it has been said he did.—

" Up with the bonnie blue bonnet,
The dirk, and the feather, and a'!"

So erroneously do poets judge of their own productions, that Mr. Scott had actually committed a great portion of the first manuscript of this poem to the flames, and but for the encouragement and persuasions of two of his friends, both gentlemen of the Scotch Bar, "The Lay of the Last Minstrel" would, in all probability, never have appeared; but, animated by their approval and earnest recommendations, the author again set his genius to the task, and by a short incubation, a new *Phœnix* sprung from the ashes of the former, and with muse-plumed wings soared aloft in the regions of fancy. This first important work* by SIR WALTER SCOTT, was

published in 1805; and before the surprise and gratification of the public, in the perusal of it, had well time to subside, appeared the admirable poem

MARMION,

A TALE OF FLODDEN FIELD.

Of this work, more than 36,000 copies were sold in a few years. The publishers in the first instance voluntarily gave 1000*l.* for this poem, as they had before greatly benefited by the sale of the "Lay." It is not to be presumed, that this work was entirely faultless, and of course did not escape the *raven croakings* of the CRITICS; LORD BYRON too, who, as a cotemporary poet, might have shown some delicacy towards the author; like another BRUTUS, could not refrain from giving a *stab* to the *exalted* MARMION; yet, triumphing over these attacks, and surviving the wounds they inflicted, MARMION continued to increase in public estimation, and

* Sir Walter Scott is said to have written this poem originally at the instigation of the Countess of Dalkeith, and, if this be correct, the

world is indeed indebted to her ladyship for having enjoined on the poet, a task, which he has executed so ably, and which has afforded thousands such exquisite pleasure.

soon placed the poetical reputation of SIR WALTER at the highest station in literature, almost inaccessible to future assaults.*

THE WORKS OF DRYDEN, in eighteen volumes, with critical and explanatory notes, and a life of the author, with remarks on the taste of the age, &c., by SIR WALTER SCOTT, was more a work of labour than of genius. This work seems to have occupied his time alternately with MARMION, as it appeared a few weeks after the publication of that poem. SIR WALTER assisted in editing SOMER'S valuable collection of TRACTS; and also SADLER'S STATE PAPERS, by the latter of which he collected much information respecting the affairs of Scotland in the 16th century, and historical notices of the reign of HENRY VIII. SIR WALTER's connexion with the Edinburgh Annual Register, is scarcely worth noticing. MR. SOUTHEY

was the original editor of this publication, but for want of support it ceased in a few years.

The most successful poem, which SIR WALTER committed to the press, was written more *en ame*, on account of the subject, than any other preceding composition; it was entitled

THE LADY OF THE LAKE.

The scenes therein represented, and the circumstances related, have such a reference to national feeling, and are so picturesque of the manners and sentiments of a brave and patriotic people, that even fiction assumes a costume so similar to fact, that, one might easily mistake the representation for reality. A female cousin, however, would have dissuaded him from publishing this poem,



DRYBURGH ABBEY.

lest he should thereby lose any of that fame which he had already acquired; fortunately, the Lady's remonstrances did not succeed, and "THE LADY OF THE LAKE" appeared in 1810.

Subsequent to this, from 1811 to 1815, SIR WALTER published several minor poems†, and it is needless to say, with perfect success.

* "I consider MARMION," says ALLAN CUNNINGHAM, "as the least happy in its story, and the most fiery and impetuous in its narrative, of all the poet's compositions. I know of no poetic description of a battle, in either ancient or modern times, to compare with that of Flodden Field; the whirlwind of action, the vicissitudes of a steady and desperate fight, with the individual fortunes of warriors, whom we love or fear, are there, yet all is in keeping with history. Yet, says another biographer, it is a well known fact, that the celebrated battle in MARMION, the most spirit-stirring piece of martial poetry ever composed, was written at a single sitting after dinner, in the room of one which was cancelled, because it was not thought equal to the rest of the work.

† "ROKERY" was published in 1813, and not long after, "THE LORD OF THE ISLES." Though this latter poem is not inferior to any that precede it, it met not with that enthusiastic reception from the public, as had awaited the former publications, and SIR WALTER, probably fancying that the reading world was becoming cloyed with his poetical productions, and taking up with some rivals, who now appeared in the

In fact, his name would at the period mentioned, have given currency to any thing of tolerably stirring value; but now having strayed through all the pleasing paths of Parnassus, breathed the breezes redolent with scents of the full blown flowers, that shook their odours on the perfumed wings of Zephyrus, gently wafting round his head, he seemed satiated with song, and laying aside the Caledonian pipe, or committing it to the Pyerian spring. SIR WALTER now commenced *artist* in prosaical delineations of human character, through historical views, painted with the glowing colours of novel narrations under the title of

WAVERLY.

The publication of this work was anonymous, the author choosing

field, might have been the cause of his withdrawing from the contest, after sending forth "The Vision of Don Roderick," "The Bridal of Triermain," "and Harold the Dauntless;" works of inferior importance.

SIR WALTER, having thus abandoned the walks of poetry, entered into a new path, but covertly (as noticed in the text), so that he long enjoyed the praises which his new works elicited from all, without its being known that he was their author.

to remain incognit, for what reason is not exactly ascertained. The ostensible one since given by himself, was a doubt, whether it would be encouraged by the public; and had this been the case, posterity would have known as little of the author of *WAVERLY*, as we do now of the writer of *Junius' Letters*. *WAVERLY* was published in 1814, and great anxiety was manifested to discover the author, but in vain, until the entire success of the work had rendered further concealment an obstinate folly. In a very short time 12,000 copies were sold. After the failure of *Messrs. CONSTABLE* and Co., the secret came out, and the "Great Unknown" was unmasked at a dinner in furtherance of the benefits of the Edinburgh Theatrical Fund, given in the assembly rooms of that city. A new edition of this work, in a more compact form, was issued in 1829, the sale of which has exceeded all expectation; and as a standard work, is likely long to continue.

Of *WAVERLY*, however, it is to be further observed, that it was commenced as early as 1805, and about a third of it written, when, in consequence of the unfavourable opinion expressed of it by a friend, to whom it was shown, it was thrown aside and neglected for many years. Happily, however, the subject possessed too strong a hold on his fancy to be utterly abandoned; and at length, *WAVERLY* appeared, as above described, to the astonishment and delight of the reading world, who were long lost in conjectures— who was the author.. The more it was perused, the greater and more numerous were the beauties discovered; and "I have seldom felt more satisfaction," says SIR WALTER, "than, when returning from a pleasure-voyage, I found *WAVERLY* in the zenith of popularity, and public curiosity in full cry after the name of the author."

Although the name of the author of these works was studiously concealed, conjecture had assigned them to the true one, long before he was compelled by circumstances to avow it; and on a visit which he made to London in 1820, His Majesty George IV. bestowed on him the title of *Baronet*. He had frequently been honoured with interviews by his sovereign when Prince of Wales, and Prince Regent, but this last mark of favour, reflected honour on the donor, as much as on the recipient. He was then scarcely recovered from an alarming illness, which went nigh to prevent the world from enjoying that series of admirable composition which he has since produced.

THE LIFE OF NAPOLEON BONAPARTE

appeared in 1827, in nine volumes, for which SIR WALTER received a large sum. This biographical memoir of so great and wonderful a person, as this soldier and legislative usurper undoubtedly was, has been accused of misrepresentation in some instances, and a want of that impartiality which marks the style of an unprejudiced writer. Something, it is true, may be allowed for political feeling; and an ardent lover of his country can only with difficulty divest himself of dislike towards one of its bitterest enemies.

It now becomes our painful duty to speak of SIR WALTER's pecuniary embarrassments, which arose in bill transactions in business, in connexion with the house of CONSTABLE & Co., booksellers and publishers, of Edinburgh. SIR WALTER having entered into a kind of partnership in that establishment, he became responsible for all that portion of it in which he had engaged to take a share. It is seldom that men of genius, and poets in particular, are men of business, that can descend to the minutiae of trade, and take those precautions in pecuniary matters which are necessary to secure them from danger in commercial transactions. SIR WALTER having entered into the speculations of CONSTABLE

and Co., he could not do otherwise than share in their fortunes, or rather their misfortunes. (Far be it, for a moment to entertain the idea, that the transaction was not throughout just and upright, as it respects all the parties concerned.) But, it is reasonable to suppose, that had SIR WALTER been fully aware of the sudden vicissitudes which frequently occur in trade, he would not have hazarded the being responsible for so large a sum as 120,000*l.*, which he did, by joining the house in bills of accommodation, in order to bolster up their credit. The result being, that on the house becoming bankrupt, that the acceptances so given were held by the creditors as demands upon SIR WALTER SCOTT, and he was obliged to recognize them as such, and thereby lay himself under obligations to the amount above described, to the discharge of which his whole estate was inadequate. SIR WALTER having once made the engagement, he was compelled to pay it. Without the slightest stain upon his honour, as the debt was not, properly speaking, of his own contracting, he might have cancelled it by the sacrifice of the property he then possessed, and by becoming bankrupt, have secured to himself the profits of his future labours. But, with a delicacy of feeling, which induced him to decline taking advantage of this legal resource, he undertook, within ten years, to pay both principal and interest of that enormous sum. To this resolution the world owes the avowal of the author of the *Waverly Novels*; the production of a greater number of valuable works than would otherwise probably have been composed, in the same space of time; and the premature death of this amiable man and talented writer. The uneasiness which so terrible a reverse of fortune must create, even in the most philosophic breast; the constant exertion of his mental powers, and the confinement and labour necessary for the commitment of his imaginings to paper, gradually undermined his health, and brought on that complication of disorders which has at length deprived the world of its brightest ornament.

At the time when SIR WALTER's difficulties first arose, he was engaged in writing the "LIFE OF NAPOLEON;" and the disclosure of this circumstance, which was one consequence of it, was favourable to that work, as many eminent men, both military and civil, sent him materials for his history, to which, otherwise, he would not have had access. Although this work is not freed from errors, it is, in the whole, worthy the pen of this great man. His predilection for military affairs caused him to enter, with interest, into the movements and achievements of that celebrated warrior, whose rise from mediocrity to be the arbiter of the destiny of kings and kingdoms, he was engaged in tracing.

In pursuance of his determination to exert superhuman efforts for the payment of the heavy load of debt which almost weighed him down, numerous works were published (as before noticed), with astonishing rapidity. Yet, though this haste of composition betrayed their author into trifling mistakes, which some pseudo-critics have delighted to expose, it has not prevented the works themselves from being masterpieces in the art of romance-writing. Some excellent historical performances were likewise amongst his latter productions. But even his strong constitution could not always bear up against the effects of such close application. (Although the early and middle life of this distinguished genius had been of a gay and cheering nature, but having now past the meridian, together with his great anxiety and exertion of mind, clouds began to gather round, and seemed closing over it; and, to complete his misfortunes, in the spring of 1831, illness commenced the work of destruction upon his hitherto robust and healthy constitution, and in a few months, the ravages of disease became very apparent; yet his spirits were still good, and he was still the life, of the company, when he entertained visitors at his table. To Abbotsford he was attached with almost doting fondness, and

nothing could gratify him more than to point out its treasures and its beauties to those capable of appreciating them.*

At length, however, he became unable to do this, and the soft air of Italy was considered as the only probable remedy for his declining health. Whether mental affliction was doing the inward work of destruction, we cannot say, but that bodily infirmity was fast advancing, began to be apparent; and in the summer of 1831, symptoms of fatal issue, from the virulence of his disorder, was to be apprehended. With this conviction, and thinking that a milder air likely to benefit their patient, his physicians advised a visit to the serene atmosphere of Italy, which voyage he undertook in the autumn of the same year. So highly was the recovery of this excellent man estimated, that the government offered to provide a ship for his transport to the genial climate of the Peninsula. On his arrival in London, to avail himself of the offer, his reception was enthusiastic. His value seemed to be increased by the near prospect of his loss. He visited NAPLES and ROME, and for a short period there appeared reason to hope that the end of the voyage would be answered. But the powers of life were now exhausted to rally effectually; and, although he had the pleasure of visiting ROME, and of inspecting the ruins of that magnificence so renowned in classic lore, yet neither the salubrious regions of the south, nor the enlivening objects of ancient grandeur could strengthen out the body, or revive the embers of that fire, which was fast dying away, and rapidly going out; his return from the continent was therefore rapid, and with seeming anxiety to reach the home he had reluctantly left, and where he ardently desired to close his illustrious career. He returned by way of LONDON, where he remained a few days, attended by SIR H. HALFORD and DR. HOLLAND. He proceeded to Edinburgh, and from thence to Abbotsford on the 11th of July, 1832. So great was the public anxiety about the fate of this exalted writer, that daily accounts of his condition were published in the *Journals* of both ENGLAND and SCOTLAND. After lingering till the 21st of September, nature yielded the contest so long protracted, and the soul that had animated SIR WALTER SCOTT with mental energies and a lucid imagination, greater than had yet appeared in his country, mounted to its celestial and everlasting abode. Thus ended the life of a man, deservedly considered as the pride of his nation. His genius was universal; and his virtues were equalled only by his talents. "Being dead he yet speaketh," and his WORKS will form an imperishable monument to his fame.

The remains of this departed genius were interred on the 26th of September, 1832, in a small piece of sepulchral ground at DRYBURGH, which belonged to the family. The mournful procession consisted of about sixty vehicles of various kinds, and some friends or admirers on horseback. The scenes through which it passed, were calculated to renew recollections of the life and deeds of the dead, at the time unconscious of the feelings that affected the hearts of his mourners. DRYBURGH ABBEY, by this event, obtains a celebrity and an interest, that its founder could not give, and will have a place in the annals of antiquity, when prouder architectural edifices shall be forgotten.

To give a character of the intellectual accomplishments of SIR WALTER SCOTT is no small task, nor can any commentary effect that purpose so well as the works he has left behind him. His mind and memory were capacious, his judgment clear, and his discernment quick and correct; he carried with him to the grave,

honours seldom achieved by literary men through the power of the pen; but he bore also to the tomb, a conscientious integrity, honesty, and rectitude of purpose, that will embalm his memory with incense more grateful than any praises of his talents can bestow.

In his person he was of a muscular form, broad-shouldered, but not corpulent; his general appearance was plain, and rather rusticated: there seemed something of a severity in his countenance, ill according with the benevolence of his disposition; his stature was rather above the middle proportion; and his head was of a construction, formed by its height, to engage the study of the phrenologist; the circumference is said to have been small in proportion to the altitude, but, however nature might have formed the structure of the body, she had been profuse in the composition of his mind.

CHRONOLOGY.

(Concluded from page 159.)

In CHRONOLOGY, the time when an event happened, or the number of the year reckoned from some fixed period, is denominated the *date*; the fixed period, whatever it may be, from whence the date is reckoned, is called the *EPOCH*, and the series of years commencing with that epoch, is denominated the *ERA*; thus, an epoch resembles a mathematical point, and an era, the line generated by the motion of that point.

The integral standard, or original measure of time, being a *year*, this measure requires some further remarks. The year is divided into *natural* and *civil*. The former is either *Solar* or *Lunar*.

The SOLAR YEAR, which is determined by the apparent revolution of the Sun round the Earth, is either *tropical* or *sideral*.

The TROPICAL YEAR is the time which is measured by the revolution of the sun from any one of the *equinoctial* or *solstitial* points, to the same point again, and contains, as before observed 365 days, 5 hours, 48 minutes, and 49 seconds.

The SIDERAL* Year is the time which is measured by the Sun's revolution from any fixed star, to the same star again, and contains 365 days, 6 hours, 9 minutes, and 14½ seconds. The former of these is the true "SOLAR YEAR," and the difference between them is owing to the precession of the equinoxes.†

The time which is measured by twelve *lunations*, or revolutions of the Moon from the Sun to the Sun again, is called the "LUNAR YEAR;" and contains 354 days, 8 hours, 48 minutes, and 36 seconds.

The CIVIL SOLAR YEAR contains 365 days for three successive years, which are therefore called *Common Years*; and 366 in the fourth, which is called the *Bisextile*, or *Leap Year*. This is likewise called the JULIAN YEAR, from Julius Caesar, who appointed the intercalary ‡ or additional day to adjust the *Civil Year* to the *Solar Year*. As the intercalary day was added to the 24th of February, which in the Roman method of reckoning was called *Sextus Kalendas Martii*, or the sixth before the *Kalends* of March; and as the intercalation was made by ordering the *sextus Kalendus*, &c. to be *bis*, or *twice* repeated every fourth year, it from hence obtained the name of *bisextilis*, or the *Bisextile Year*. But this intercalary day is now added to the *end* of February.

The CIVIL LUNAR YEAR, which has been adopted by several

* *Starry*, relating to the stars.

† In astronomy, a term applied to a slow-motion of the equinoctial points towards the west; and contrary to the order of the signs. (The act or state of going before.)

‡ Inserted in the *Calendar*, in order to preserve the equation of time, hence called the *intercalary day*.

* Unwisely, perhaps, he had spent large sums on the Abbotsford estate, on grounds sterile by nature, and the soil of which was not of a quality to repay the labour and cost of cultivation.

nations contains only 354 days; but this falling 11 days short of the Solar Year, by which the seasons are regularly determined, they were obliged to make every third year, an *intercalary*, or *embolimic year*, to which they usually added a month to adjust the difference.

The Jews, who followed this method of computation, made every third year, an *embolimic year*, to which they added a month of 30 days; so that every three years they fell nearly four days short of the *solar year*.

The JULIAN, or CIVIL YEAR is made use of in Europe, and commences on the first of January. But as this is eleven minutes longer than the true solar year, which, though a trifling error in itself, amounts to a whole day in 130 years, and in a longer time becomes more considerable: POPE GREGORY XIII observed in the year 1582, that the equinoxes and solstices were 10 entire days more backward than at the "Council of Nice," which was held in the year 325. As this necessarily occasioned a great confusion, by unfixing the times of the celebration of EASTER, and other moveable feasts, he ordered 10 days to be suppressed, by calling the 11th of March the 21st: and to prevent the like variation for the future, he instituted a new form of years, from him called the "Gregorian," by which a day is taken out of the CALENDAR, every 133d year. To effect this with as little confusion as possible, he continued it in the following manner: From the 1600th year of the Christian Era, every 100th year, which, according to the Julian form, is called a *Bissextile*, or *Leap Year*, was to become common for three successive centuries; but every 400th year was to remain a *Bissextile*, as in the Julian account.

The Julian or OLD STYLE, as it is called, was used in England till September 1752, and produced a difference of 11 days, between the foreign computations and ours: but at that time, the 11 days were suppressed, and the *Gregorian account*, or NEW STYLE adopted here, as it is in most other parts of Christendom.

This account is so nearly adjusted to the new solar time, as to leave no room for any after improvements; for it will be attended with an error of only a single day too much in 5760 years. We might here enumerate the different constitutions of the civil year which have prevailed in different countries; but as these inquiries are more curious than useful, they are foreign to our present purpose.

Besides the above divisions of time, Chronologists make use of the following CYCLES, viz.: *The Cycle of the Sun*, *the Cycle of the Moon*, and *the Roman Indiction*. The Cycle of the Sun is 28 years, that of the Moth 19, of the Roman Indiction, 15.

From the preceding observations, it will be observed, that the great difficulty in the study of CHRONOLOGY is to fix some certain date to which all others may be referred. The most ingenious, that was ever devised for this purpose, is that called the "Julian Period," which is founded upon the following principles:

First; the SOLAR CYCLE is a period of 28 years, in which all the varieties of the Dominical letter will have happened; and the days of the week, at the completion of this Cycle will run the same round again. At the birth of Christ, 9 years had passed of this Cycle.

Secondly; the LUNAR CYCLE is a period of 19 years, containing all the variations of the days in which the new and full Moons happen. At the birth of Christ, the *Golden number*, which is the number of years elapsed in this Cycle, was 2.

Thirdly; the ROMAN INDICATION is a Cycle of 15 years, used by the ancient ROMANS for the times of taxing the provinces: three years of this Cycle were elapsed at the birth of our Saviour.

Now, the Julian Period arises from the multiplication of all these Cycles, viz., 28, 19, and 15, which makes a period of 7980 years: for by supposing all these Cycles to commence on the first of January, it will take up a period of 7980 years, before they could commence at the same time again.

The origin of this period carries us back 710 years before the usual date of the Creation, or according to others 706. This artificial period for fixing the computation of Chronologists, was the

* *Embolimic*, so called from the Greek, signifying the addition of a certain number of days to make the *lunar year*, which is but 354 days, equal to the *solar*, which is 365, as expressed above.

+ *Dominical*, denoting the Lord's Day (from *Dominus*, Lord), or Sunday. The *Dominical letter*, in Chronology, is that which denotes the Sunday in almanacs, &c. throughout the year; of these letters there are consequently seven, beginning with the first letter of the alphabet; and as in *leap-years*, there is an intercalary day, there are then two, the first of which denotes every Sunday till the intercalary day, and the second all the Sundays which follow after it.

invention of JOSEPH SCALIGER,* who died A.D. 1609. The present year, 1832, is the 6546th of the Julian Period.

CHRONOLOGY may be divided into three parts; viz., *sacred*, *ancient*, or *profane*, and *modern*.

SACRED CHROLOLOGY is that which relates to the Jews, in the sacred writings, the chief events and Epochs of which are the following:

	B.C.	
The creation of the world .	4004	Captivity of Judah, by Nebuchadnezzar, King of Assyria and Babylon .
The deluge	2348	
Babel built	2233	
Abraham born	1996	
The call of Abraham	1921	Babylon taken by Cyrus, and the Jews liberated from captivity .
Isaac born	1896	
Jacob and Esau born	1837	
Joseph born	1745	The second Temple built .
Jacob and his family go into Egypt	1706	The Septuagint version of the Bible, made by the order of Ptolemy Philadelphus, King of Egypt .
Moses born	1571	Jerusalem taken by Pompey, the renowned rival of Julius Caesar .
The Israelites delivered from Egypt	1491	Herod, the Idumean, made King of Judea .
Saul made King of Israel	1095	
David born	1085	
The foundation of Solomon's Temple	1012	
The ten tribes revolt, and division of the kingdom of Israel and Judah	97	
		| Jesus Christ born

ANCIENT, or PROFANE CHRONOLOGY, that portion of time in which history relates the accounts of all countries and kingdoms, down to the birth of our Saviour. The principal Epochs in Ancient or Profane Chronology are,

The Argonautic Expedition, fixed by Newton .	1225	Socrates flourished	400
The destruction of Troy, according to Playfair .	1184	Alexander conquered Darius	331
The institution of the Olympiads	776	The Philippic era, or death of Alexander the Great	
The building of Rome, according to Varro .	753	The conquest of Carthage by the Romans	202
The era of Nabonassar, used by the Babylonians	717	Pompey defeated by Julius Caesar	47

MODERN CHRONOLOGY comprises the time from the birth of our Saviour to the present time. The most remarkable epochs of this period are,

	A.C.
The era of Christ	0
London founded by the Romans	49
Christianity first preached in Britain	63
The destruction of Jerusalem by Titus, Emperor of Rome	70
The Church established	306
The grand Council of Nice	325
The Roman Empire divided into East and West	364
The Pope's supremacy established	606
The era of Hegira, or flight of Mahomet from Mecca, which is the epoch from whence the Mahometans compute their era	622
Spain conquered by the Saracens	713
Charlemagne flourished	800
Alfred the Great flourished	896
William the Conqueror subdued England	1066
The first Crusade	1096
Magna Charta signed	1215
Art of Printing discovered	1440
America discovered by Columbus	1492
Constantinople taken by the Turks	1453
The Reformation by Luther	1517
The Reformation began in England under Henry VIII	1534
The Spanish Armada destroyed	1588

* Scaliger was born at Agen, in France, A.D. 1540. He first studied at Bourges, and afterwards at Paris. He was a great critical and historical writer, and chronologer. He was also a great linguist, and was well acquainted with thirteen different languages. He was invited to the chair of *Belles Lettres* at Leyden, a city of Holland, in 1603. He died there in 1609. His works are very numerous, and various. He was the son of Julius Caesar Scaliger, an Italian physician, who was born at Ripsa, in the territory of Verona.

THE

GUIDE TO KNOWLEDGE.

EDITED BY MR. W. PINNOCK,

AUTHOR OF "PINNOCK'S CATECHISMS," "GRAMMAR OF GEOGRAPHY AND HISTORY," ETC., ETC.

No. XXII.]

SUPPLEMENT, NOVEMBER 1, 1832.

PRICE
ONE PENNY.

POULTRY YARD.—(See page 172.)

BANTAM COCK.



BARN-DOOR COCK.

GAME COCK.

POLAND COCK.

NOVEMBER.

"The lengthen'd night elaps'd, the morning shines
Serene, in all her decoy beauty bright,
Unfolded fair the last autumnal day.
And now the mountain Sun dispels the fog,
And rigid hoar-frost melts before his beam ;
And hung on every spray, on every blade
Of grass, the myriad dew-drops twinkle round."

NOVEMBER, now the eleventh month of the year, but in the ancient ROMAN CALENDAR the ninth, was so called from the Latin word, *noven*, nine.

The SAXONS denominated it *Wint-Monat* (*Wind Month*), because of the high and blustering winds which prevail throughout the month. They also called it *Blot-Monat* (*Blood Month*) as being the month when they killed great numbers of cattle for winter store, and for their sacrifices. The preceding month, for the most part, was marked by the change of the colour in leaves, but this is distinguished by their *full*; hence, the whole declining season of the year is often denominated *The Fall*.

Those trees which recently exhibited themselves in full grandeur of verdant beauty, and gave shelter to myriads of tuneful birds, now spread their naked arms abroad in repulsive dreariness of appearance.

The utter leaflessness of the trees, added to the darkness of the atmosphere and the chilliness, frequently accompanied by rain, make November so unpleasant, that it is usually called the "*Gloomy month*."

This apparent decay of nature, and quick succession of springing and fallen leaves, suggests to the reflecting mind an apt comparison for the fugitive generation of men.

"Like leaves on trees the race of man is found,
Now green in youth, now withering on the ground ;
Another race the following spring supplies,
They fall successive, and successive rise ;
So generations in their course decay,
So flourish these when those are passed away!"

Popz's Homer.

Of the advantages of the variety of the weather, we may observe,

that November both negatively and positively ministers to the fertility of the earth. The raw chillness of the days of this month, like the severe cold of the approaching winter, may be termed the holidays of the earth. It is no longer warmed by fructifying exertion, which, if perpetuated, would, in the end, utterly exhaust its strength; while, at the same time, abundance of useful salts is conveyed into its bosom by those showers which so frequently descend. But though thus useful, it cannot be denied, that November is exceedingly gloomy, and hence is productive of gloomy feelings. Even the very animals seem to feel so, displaying a drowsy and drooping demeanour, very different from their late alacrity and liveliness. Hence has arisen the supposition, from low spirits which are usually attendant on its gloom, that November, for a long time, is particularly influencing to suicide. But a modern observer has rescued it from this reproach, and proved, by the result of a register kept for many years, that suicides are not, in this country, more numerous in November than in any other month in the year. Such unhappy occurrences usually arise from personal distress, either external or mental, and not from any peculiar state of the atmosphere. Happily for mankind, their good and gracious FATHER has ordained that the change from gay verdure and cheerful sunshine, should not be sudden, but gradual, thus accustoming us by degrees to the alteration. Even November has some smiling days, and the leafy honours of some trees are later taken away than those of others.

The Sun, though

Shorn of his glory, through the dew profound,
With melancholy aspect and dull orb,
Looks on the day, while he strives to pierce
And dissipate the slow, reluctant gloom,
Seems but a rayless globe, an autumn moon,
That gilds, opaque, the purple zone of eve,
Lo! now he conquers; now subdued awhile,
Awhile subduing, the departed mist
Yields to a brighter beam,

and the landscape assumes, for a short period, a portion of those glories which a few weeks before shone so resplendent and so steadily.

But it is in high northern latitudes only, that NOVEMBER is found to be at all a gloomy month. To say nothing of its being the commencement of spring in the northern hemisphere; we are assured that it is a cheerful delightful month in countries but a few degrees north of the Equator. NOVEMBER, says a modern writer, is a delightful month in BENGAL. There is an agreeable cold wind from the north; the air is dry, and the nights are clear, the THERMOMETER ranges from 66° to 86° , so that the weather is sometimes very warm, and never, perhaps, what we should consider cold, except when the wind blows strongly, for that makes a great difference in the sensation of cold.

The order of the succession in the fall of the leaf in this country has thus been enumerated by an observer of nature; walnut, mulberry, horse-chestnut, sycamore, pine, ash, elm, beech, oak-apple, peach; the poplar loses its leaves early and produces them late in the spring.

In this month, those beautiful and graceful creatures—the Wood-Pigeons arrive in our climate, and are the latest of the migrating birds which repair to this country from fiercer and more rigorous climates.

SALMON, too, now ascend our rivers for the purpose of depositing their eggs. In their course they necessarily have to encounter many obstacles; and the agility and perseverance they display in rendering those obstacles insufficient to defeat their purpose are truly amazing. They will, on these occasions, actually throw themselves over cataracts, or other obstructions, of several feet in height; and when the obstacles are more than usually high, and they fail in their first attempts to clear them, they will leap, or fling themselves, again and again, until they succeed in their object.

The chief labour of the farmer in this month is completing his ploughing; and this occupies him a great portion of the month. When it is done, he lays up his utensils till the ensuing spring; he now takes his cattle out of the exhausted pastures into the stable, or yard, and supplies them with that food which the meadows will no longer afford them. SHEEP, however, may even yet find subsistence, and generally are put into the fields of turnips. But, if the weather be, as sometimes it is in this month, marked by very violent tempests, they must be very well supplied with hay, and sheltered from the rigour of the weather.

For the farmer himself, probably, this is by no means the least agreeable month in the year. For though, without doors, all is dreary enough, his own bright and cheerful fireside has now divine charms for his evenings of leisure. Sheltered, and provided in abundance with all the necessaries of life, he can complacently listen to the howlings of the storm; and if they, and the loud patterning rain excite any unpleasant feeling in his mind, that feeling springs from the reflection that but too many of his fellow creatures are exposed to the cold and rain, without a sufficiency of clothing, and without the means of procuring a cheering meal. This reflection should, indeed, occur to the minds of us all; and we should consider that Providence, in lavishing her gifts upon us, has imposed upon us the sacred duty of relieving those who are distressed.

The selling of wood for winter consumption also commences in NOVEMBER: the flail is busily employed by the industrious thresher, in separating the grains of corn from the ear; the pretty little robin-redbreast timidly haunts our windows for crumbs, and rewards us by piping soft and plaintive ditties to his mate; the hedge-sparrow, the blue titmouse, and the linnet, also approach our dwellings, and mope about the pert house-sparrows, which fearlessly keep possession of the garden and court-yard during the winter; and the goldfinch, blackbird, and thrush, may be yet seen eagerly foraging among the almost exhausted hips and haws. Ant-hills are diligently destroyed; bees are sheltered from the cold; and the pigeons are carefully attended in the dovehouse. Besides some of the orchard fruit, our gardens still retain many of the October flowers. The striped lily is in leaf, the beautiful China roses are in flower, with several of our flowering trees and shrubs; and, in fruit, we have the pyrocantha, glowing in the bright lustre of its red berries.

In NOVEMBER, coughs, consumptions, rheumatism, and other similar complaints, are prevalent, owing to the cold dampness of the weather. Much of the evil which produces these disorders arises from exposure to sudden changes of heat and cold, which should, therefore, be assiduously avoided. Flannel should be plentifully worn next the skin; and those most likely to any of the prevalent diseases of the season, should never expose themselves to the night-air, or foggy weather, without putting a piece of gum, or some simple lozenge, into the mouth.

The Protestant Church dedicates the first of NOVEMBER to the commemoration of all those saints and martyrs, in honour of whom, individually, no particular day has been assigned. This festival is called "All Saints Day."

The fifth of NOVEMBER is the well-known anniversary of the terrible "GUNPOWDER PLOT." Were it not that men, blinded by fanaticism, are capable of forming and attempting to execute the most absurd nefarious schemes, and were not the evidence which imputes to some Papist enthusiasts the diabolical intention of blowing-up the PARLIAMENT HOUSE, and thus destroying the King, Lords, and Commons at a blow, too strong and precise to be doubted, posterity would hesitate to believe, that the fifth of this month is appointed to commemorate the detection and frustration of such a plot, formed in 1605. We must not, however, for the guilt of a few misguided men, pass indiscriminate censure on all the English Roman Catholics of that day; the majority of them regarded the attempt with abhorrence, and however they might lament the downfall of their religious supremacy, would have shrank with horror from such a means of restoring it.

On the same day is commemorated a much more pleasing event; the landing, in 1688, of WILLIAM, PRINCE OF ORANGE, afterwards WILLIAM III. By his coming amongst us, a stop was put to the approaches towards despotism, which our sovereigns had been continually making; the RIGHTS OF THE PEOPLE were defined and settled, and the Protestant religion was fixed on a permanent basis.†

To the inhabitants of the Metropolis, the 9th presents the splendid pageant of "LORD MAYOR'S DAY." It is rather unfortunate

* In the early age of Christianity the word Saint was applied to all believers, as is evident in the use of it by St. PAUL and St. LUKE; but the term was afterwards restricted to such as excelled in Christian virtues. In the Romish Church, holy persons canonized by the Pope are called saints, and are invoked and supplicated by the professors of that religion. The Church of England instituted this festival in memory of all good men deceased, proposing them as patterns for Christian imitation, but not allowing any prayers to be used.

† Although King WILLIAM landed on the 5th of November, the Almanacs still continue the mistake of making it on the 4th.

that a more propitious season was not chosen for this display, as, too frequently the weather is inclement, and drizzling rains, and gloomy fogs, rob it of most of its attractions. RICHARD I., in 1189, appointed the first *Mayor* of LONDON.

The 30th is the feast of ST. ANDREW, brother of ST. PETER, and patron Saint of SCOTLAND, in honour of whom, ACHAIUS, king of Scotland, instituted, in 787, an *Order of Knighthood*, called, "THE ORDER OF THE THISTLE." On the badge, or jewel, is an image of ST. ANDREW on a cross in the form of the letter X, and a similar image is suspended from the collar.

MERCURY is an evening star throughout this month, as is also VENUS. The MOON is full on the 8th.

DR. JOHNSON attempts, both by reasoning and ridicule, to explode the idea, that the mind is influenced by the weather. "Our dispositions," says he, "too frequently change, with the colour of the sky; and when we find ourselves cheerful, and goodnatured, we naturally pay our acknowledgments to the power of sunshine; or, if we sink into dulness and peevishness, look round the horizon for an excuse, and charge our discontent upon an easterly wind, or a cloudy day."

"Surely nothing is more reproachful to a being endowed with reason, than to resign its powers to the influence of the air, and live in dependence on the weather and the wind, for the only blessings which nature has put into our power, tranquillity and benevolence. To look up to the sky for the nutriment of our bodies, is the condition of nature; to call upon the SUN for peace and gaiety, to deprecate the clouds, lest sorrow should overwhelm us, is the cowardice of idleness, and the idolatry of folly."

"The distinction of seasons, as it respects the mind, is produced only by imagination operating on luxury. To temperance every day is bright, and every hour is propitious to diligence. He that shall resolutely excite his f. culti., or exert his virtues, will soon make himself superior to the seasons, and may set at defiance the morning mist, and the evening damp, the blasts of the east, and the clouds of the south."

With all due deference to the opinions and arguments of the great moralist, we still advocate the truths of the sympathy between the mind and body; and that depression of spirits, and the consequent sluggish and inactive state of the mind, are real occurrences, induced by gloomy and foggy weather, and not mere fanciful creations of imagination. The MIND, on extraordinary occasions, may undoubtedly be aroused to as great and noble exertions amidst the rains of NOVEMBER, as in the sunshine of MAY; but this may be, by a vigorous effort, instead of that spontaneous impulse which it naturally feels, when the body is braced, and the nerves are well strung by an invigorating state of the atmosphere.

The connexion between the mind and the body, and the manner in which the former is influenced by the latter, are mysteries, which cannot, perhaps, be fully and satisfactorily explained; but it, as is generally admitted, the brain is the seat of the mind, and that the nerves, which all have their origin in the brain, convey to it ideas of external things, surely, whatever affects the nerves must influence the mind, and occasion it to be more or less lively or dull, according to the impression it receives from them.

The following table evidences a great accession of the winter cold; and what little warmth remains, is chiefly occasioned by the liberation of heat which takes place in the condensations of cloudy vapour into rain. The days also become so short and misty, and fogs so prevalent, that, with here and there a bright exception, every thing is seen through a dark and chilling medium.

Weather at	Average of the Thermo- meter.	Greatest va- riation from the Barome- ter.	Average of the average.	Quantity of Rain
London	44	44	29	68 2.527 inches
Edinburgh	41	1	29	68 4.514
Dublin	43		29	74 0.394

TORPIDITY, OR HYBERNATION.

THE WINTER SLEEP OF ANIMALS.

Where do you lurk, ye houseless commoners,
When bleak November's sun is overcast;
When sweeps the blast fierce through the deepest groves,
Driving the fallen leaves in whirling wreaths;
When scarce the raven keeps her bending perch,
When dashing cataracts are backward blown?

"Let, bleak Winter sternly come," let dearth and famine follow in his iron train, they can do no harm, for all the weaklings of the animated world have either left Britain for more auspicious climes, or, led by an analogous instinct, have in various ways sunk into protected slumbers; and the weary land rests for a season from her reproductive labours. The lizard, the hedgehog, the badger, the mole, the dormouse, and many other animals, are now securely housed in comfortable chambers in the earth, and will remain in a torpid state till the spring. Frogs have sunk to the bottom of their native pools, and lie buried in the mire. Bats, hanging by their hind feet, and warmly wrapped in the membranes of their fore feet, sleep in the upper corners of old barns, deserted buildings, and the sides of caves. Squirrels, rats, and field-mice, rest in a state of *partial* slumber, which has been called "*quiescence*," to distinguish it from perfect torpidity; but when a warm day spreads new life along their drowsy nerves, they peep forth from their dormitories, and, acquiring from the genial air a temporary appetite, they withdraw to their stores, and feed, till the evening cold again folds them in the arms of "tired nature's sweet restorer, balmy sleep." What a beautiful ordinance! that God should lead the partial sleepers to provide food for their waking hours, without which they would infallibly perish; and that the torpid sleepers, having no need, should make no provision. Reptiles of all kinds retire to *suitable* places of refuge; the tortoise to its earthen hole, the toad to its muddy canopy, and the snake to the forest holes,—each obeys the irresistible impulse, and becomes torpid. Snails, and thousands of their testaceous brethren, led by God's beneficent hand—yes, proud man—you may neglect your offspring, and despise the poor, but God will not, cannot, forget his creatures!—He who made the snail, *leads it*, on the approach of winter, to the warm angle of a branch, or the snug corner of the farmer's fence, and then teaches it to form a lid for the mouth of the shell, by which, also, it adheres to its hiding-place, and shuts out all access to the freezing air. River fishes, and even some of the sea fishes, in the absence of food, sleep away their wants by torpidity. Insects, also, obey the same wise law: spiders may now be found apparently dead, rolled up in a shroud of web, but reviving upon the application of warmth; the common house fly may sometimes be revived in the same manner. Myriads of torpid beetles may be met with, in places wonderfully adapted to their constitution, mode of life, and local necessities. The pupa of almost all the butterflies may be found in the crevices of bark, on the underside of bush-twigs, or buried deep in the earth; some exposed, but others wrapped in costly garments of silk. A few larva may also be discovered, such as the Stag-beetle, Cock-chaser, Dragon-fly, Goat-moth, &c. &c., each, with an appropriate *hibernacula*. Many surprising instances of God's care for his creatures are at this time discoverable in the modes in which the eggs of insects are preserved from the cold; some deposited by the parent, who never knew cold, deep in the earth beyond the reach of frost; others placed by those, who never saw a leaf fall, on the twigs and branches, and never on the unstable leaves; and these, also, often covered with a thick layer of water-proof varnish, or the down from the mother's body.

Thus, when the earth is a barren desert, and the "*stuff of life fails*," are these interesting beings, preserved like the corn-blade beneath a mantle of snow, to flourish again in times when God, by his plenitude, shall add pleasure to existence. If, therefore, our heavenly Father condescends in this way to "temper the wind to the shorn lamb," shall we be tardy in uplifting the shield of charity, and by a free but prudent dispensation of his gifts, deprive the northern blast of its bitterness, that instead of starving groans, it may waft the blessings of the grateful poor to heaven.

PHILOSOPHY OF TORPIDITY.

Preservation from cold, and the want of food which attends it, is, without doubt, the object of torpidity, but is highly questionable

if it be the *cause*; as most animals retire to their winter haunts before the cold begins, and while food is yet in sufficient abundance to preserve life. The great monitor on this occasion is a heaven-born instinct, which suffers none of them to be starved to sleep, but sends them far to their six-months' bed, and keeps them there months after the air has become sufficiently warm for their comfortable existence, in order that in the interval the flowers, leaves, &c., &c., upon which they feed, should grow in the requisite abundance.

Dr. Fleming has ably stated the theory of hibernation, and from his work^{*} we have abridged the following concise view of the whole phenomenon.

Previous to this winter lethargy, all animals select a proper sleeping-place, in general assume a particular position, and in some few cases, provide a small stock of food.

The following circumstances characterise in a greater or less degree, every case of torpidity.

1. *Diminished temperature.*—The animal is usually cold and stiff; much below the summer standard of heat, or the ordinary temperature. Still it is warmer than the surrounding air, for the energies of life, though feeble, produce a small quantity of heat.

2. *Diminished respiration.*—The breath is so greatly diminished, that in some cases it reaches total suspension. In general, instead of being performed with regularity, as in ordinary sleep, the respirations take place at intervals, more or less remote, according to the degree of lethargy.

3. *Diminished circulation.*—Dormice when awake and jumping about, breathe so rapidly, that it is hardly possible to count the pulse, but when torpidity has first commenced, it falls to eighty-eight pulsations in a minute; when half torpid thirty-one in a minute, and nineteen or sixteen, when the animal is so torpid that the action of the heart is imperceptible. It has been observed that the position of the animal during hibernation is such as to impede the circulation.

4. *Diminished irritability.*—Destined to remain some time in a lethargic state, a continuance of the power of irritability would be accompanied with the most pernicious consequences, and therefore the susceptibility of being excited into action is very feeble, or nearly suspended. Parts of the limbs may be cut off without the animal showing any signs of feeling.

5. *Diminished action of the digestive organs.*—The action of the stomach and its allies is exceedingly feeble. The mental and physical functions harmonise together in a corresponding lethargy, so that the secretions being small, nourishment from the stomach is not wanted.

6. *Diminished weight.*—A loss of substance always results from hibernation. Animals enter into that state fat and fleshy, and awake from it lean and light.

EMIGRATION OF BIRDS.

No law of nature can be deduced from the consideration of a single fact. In all her aspects she is essentially relative; and he who would come to right knowledge of her peaceful ways must unloose the trammels of his mind, and with a humble sense of his liability to error, look abroad through the wide world, and before he permits himself to adopt a single principle, to be sure that it is in the strictest harmony with every thing which exists, for one jarring note will be an evidence of falsehood. No person who looks with partial eyes on nature can ever be a true naturalist; he will resemble a man, who, knowing nothing of the laws of his country, should, upon being shown the court of chancery, go away, and tell his children, that we had no written laws, no statutes, but that judgment rested in the free unbiased opinion of the judge. For want of this principle, the ancient, and many modern naturalists, have committed so many woeful blunders, that their works can now only be used as splendid ruins, warning the world of danger. Few subjects exhibit the shortsightedness of which we complain, in a more striking manner, than those theories of the emigration of birds, which have for many ages pampered the credulity of unsuspecting, because unthinking millions. However, the truth is now happily manifested.

ARRIVALS.

- GOLDEN PLOVER (*Charadrius fluvialis*)
- RED-HEADED POACHER (*Nyroca ferina*)
- BOHEMIAN WAX-WING (*Bombycilla garrula*)
- GOLDEN-EYE DUCK (*Clangula vulgaris*)
- GADWAL (*Anas strepera*)
- WIDGWON (*Anas Penelope*)
- STOCK DOVE (*Columba Oeneas*)

From the north,
or by a partial
migration from
Scotland and the
border counties.

DEPARTURES—none.

POULTRY YARD.

I.—FOWLS.

"PALE concluding winter comes at last;" our pleasures are diverted into new channels, and we look nearer home for enjoyment. But as much time is frequently lost in seeking it from inadequate sources, it will be our pleasing task to direct attention to what we have found to be a little world of wonders, and what we can promise our readers will amply repay a close investigation. We would lead them to a farmer's poultry yard, and introduce to their acquaintance the various members of its interesting fraternity. Reaumur, the Prince of Naturalists, says, in accordance with our invitation, "The man is happy who has an inborn taste for soft quiet amusements, which he may resort to at any time of day; he is still happier when he has good ground to expect from the said amusements, curious branches of knowledge that may become useful to mankind. These may indeed be called philosophical amusements. THE BIRDS OF A POULTRY YARD WILL AFFORD DIVERSIONS OF THIS KIND TO ANY THAT SHALL BE FOND ENOUGH OF SITTING AND OBSERVING THEM." By such practice, they will insensibly contract an inquisitive disposition, which will make them acquire a pleasing, satisfactory, and useful knowledge."

Husbandmen are now busily engaged with the *flail*;—threshing has become universal, and so incessant are the monotonous thumpings of what Burns has aptly called the "weary flinging tree," that they seem to bang every moment of the short-lived day into premature oblivion. No sooner does the sound disturb the village serenity, than all the fowls of the farm, leaving their dung-heaps, run to the front of the barn, and there continue, day after day, fattening upon the grains which are continually starting into the open yard. It is on such an occasion, we invite our readers to study the habits, form, &c., &c., of the domestic fowl, for they are then in finer condition (fat and full of plumage) than at any other period of the year.

The first thing noticed, will, perhaps, be the infinite variety of colours, from black to white, with all the intermediate hues, which decorate and distinguish each species. Reaumur remarks upon this subject, "That most cocks when exposed to the sun, shine with the brightest colours, and the beauty and odd mixture of which we are the more struck with, as we are more intent in looking at them. The hens are not less worthily adorned. Some of them have spots distributed with a kind of regularity, and so brightly white, they have been called *silvered* hens. Others go by the name of gilt hens, because they are decked with spots, which in the sun looks like gold. The more common colours, also, are distributed with innumerable varieties on the ordinary hens, and offer together so great a multitude of tints, that it would be difficult to find parallel colours in any of the created kingdoms. These endless varieties, while they add beauty to the bird, fill the mind of the mere systematizer with dismay; for being used only to describe a species of birds by its *feathers* and not by its *habits*, he finds, the dung-hill cork would furnish him with specific matter to the end of his days, which, as it would of course be longer than his wits, nobody would read. In saying this, we do not express ourselves hostile to systematic arrangements of animals; on the contrary, we use them, recommend them, and are always ready to maintain on their behalf, that SYSTEM IS THE SOUL OF SCIENCE; and that without order, knowledge would infallibly perish in confusion. We only object to an undue use of system."

However, amidst the profusion of colours, the young naturalist will not fail to meet with some birds which differ so strongly from each other, that the difference may justly be deemed specific; from these he will proceed to differences of form, &c., &c., till in a short time he will find the motley multitude composed of a number of

well-defined and interesting families. To assist him in these investigations we subjoin a brief account of the chief varieties, with a few other matters of interest.

THE DUNGHILL COCK (*Gallus domesticus*).—The records of authentic history are not coeval with the origin of this useful bird; for having undergone an immemorial series of domestication, his varieties have been so greatly multiplied, that it has become impossible to trace his descent with precision. Food, climate, habits, and hereditary diseases, have combined in the lapse of ages, to stamp his noble form with a confounding versatility of character; excepting those which are perfectly white, none are alike in colour, and equally various in form, little beyond a very general coincidence is observable. But notwithstanding these difficulties, it is pretty generally agreed, that the parent stock is still to be found in the vast jungles of the East Indies, Sumatra, and other adjacent places.

Mutability of colour seems to be inseparable from a state of domestication, and its degrees of vicissitude, would almost appear to be a measure of the length of the species servitude. The cock is one of the oldest servants of man, and accordingly we find the antiquity of his alliance, exhibited in a series of changes which the feathers undergo, so striking, that no parallel in an equal degree is to be elsewhere found. The colouring of the feathers partake not only of a great relative, but also of an individual diversity; for they have no permanency, and annually assume new colours. Beauamer, who watched this phenomenon very closely, reports that a cock in his possession, changed from a reddish and white, to a red colour, and from this to black, and so on to white, ruddy, white, brown, &c. And also of an old hen which, in the course of four years, shifted from black with white spots, to perfect black, whitish, and perfectly white. This change which is totally distinct from the whitening influence of age, black frequently succeeding white, is a very singular phenomenon, and every way worthy the attention of our observant readers.

With this highly diversified character it might be supposed that no general description could be given of the family features, sufficiently accurate to pass for a general likeness; but such a fancy would be a gross libel upon "abounding" nature: a harp-string will produce millions of different sounds, and yet retain an identity—a oneness of tone in all;—and so of Chanteleer, notwithstanding the infinity of his forms and fashions, his individuality is never lost; and although some have crests instead of combs, legs, long or short, feathered or naked; colour, black or white; plumage, feathered or hairy; with or without a tail; under every aspect he is immediately recognized.

Experience has suggested a list of characteristics which should regulate our choice of a perfect bird, and as household knowledge is pretty much alike in all ages, we have selected for the guidance of our readers, the following very graphic portrait from Master Fitzhaubert's "Booke of Husbandrie, 1540."

► "They are the best which are of a dunne, redde, yellow, or blake colour, the white is nothing so good as any of these; let them likewise be very bigge, and largely breasted, theyr talons strong, sharp, and even, carrying theyr heads straight up, theyr comines must be ruddy and hie, theyr eyes blacke and quicke of sight, theyr bills very sharpe and crooked, theyr ears big and whitish, theyr wattles of an orient colour, having under them as it were a kinde of grayish board: the fowlers of his neck oft to be of diuers colours, either pale, golden, or a glistering greene, which must hang shagging from his neck to his shoulders. his wings must be thicke sett with feathers, and very lardo, theyr tayles doubled and flagging, theyr rumpes and thyres full of feather, theyr legges strong, well armed with strong and deadly spurres.

Their disposition should be gentle, quicke, and liuelie, —: they must also be good wakers in the night, giuing warning by their crowing howe neare the breake of day approacheth. Hee must not on the other side be a coward, for he must sometimes stand couragiously stoute in defence of his henne and her chickouns, and bee ready to beate away a snake, or any other such hurtful vermaile."

THE GAME COCK.—This is the "Hotspur" of the family. More elegant in form, and fiery in spirit than his plodding brethren, he very early engrossed the affections of the warlike great; and hence we find Themistocles, when he led the Athenian army against the Persians, inspiring their drooping valour by an appeal to its martial qualities. "These animals," he said, "fight not for the gods of their country, nor for the monuments of their ancestors, nor for glory, nor for freedom, nor for their children, but for the sake of victory, and that one may not yield to the other." The

same fierce properties recommended game cocks to the manufacturers of the Grecian theology, who gave them appropriate niches in the temples of Apollo, Mercury, and Mars, to whom they were thenceforward especially dedicated. The more agreeable faculty of vigilance consigned the race to the care of Esculapius. Thus, the valour of the bird became devoted to religious mysteries, and eventually to the common festivals of the country. From Greece, cock-fighting passed into Rome, and by a similar inoculation, to ourselves; affording, in every case, sad exemplifications of the apostolic precept, "that evil communications corrupt good manners." Cock-fighting is a savage practice, and cannot fail to engender ferocious passions in its supporters. Most of our early kings disgraced the throne, and dishonoured themselves, by its patronage; Edward III., however, and Cromwell, highly to their credit, enacted laws for its suppression; but, in the latter case, with little avail, for on the Restoration, Charles, in his brutal gaiety, re-established the cockpit, which Henry VIII., of heartless memory, had founded at Westminster, and which, to the scandal of our government, exists to this hour under the name of the "Royal Cockpit." Under the fostering protection of the falsely great, cock-fighting became a regular science; the most voluminous laws were framed for its management, and it is distressing to perceive in them, how far a wicked ingenuity can pervert the right acting laws of nature.

The game cock is the most handsomely plumaged of the whole family; indeed, he is sometimes so stately in form, and magnificent in feathers, that we cease to wonder that the ancients, by way of preeminence, should have called him "the bird," or that Aristophanes, the great comic writer of Athens, should have likened him to the King of Persia. They are very difficult to rear, for their natural pugnacity of disposition shows itself at the earliest periods. Mowbray says, "I have many times had whole broods, scarcely feathered, stone-blind from fighting; the rival couples moping in corners, and renewing their battles on obtaining the first ray of light." In accounting for the object of this pugilistic spirit, it should be borne in mind, that in their wild as well as in their domestic state, they live surrounded by many dangers, have each a number of hens, with many chicks, to defend, and it may therefore be necessary to their safety, that they should possess these hostile energies, which, beaming in their bright, determined eye-balls, is in itself almost a sufficient protection.



FIRE-BACKED PHEASANT.—(See page 174).

THE BANTAM COCK, is a small Indian breed, and seems to be the game cock in a state of condensation. Equally fiery and irascible in disposition, he challenges all comers, and will not only attack, but beat much larger birds than himself. There is a small variety of this bird, scarcely exceeding the size of a common pigeon, and so elegantly formed, that a society of fanciers have been formed for breeding prize specimens.

THE POLAND COCK.—An ornamental and useful variety, originally imported from Hainburgh. It differs from the preceding birds

in having a very elegant crest of feathers on the top of the head and in being usually of a black colour. The hens are so prolific of eggs that the country housewife knows them only by the name of "everlasting layers." There are many sub-varieties, chiefly distinguishable by the differences which their second names indicate as the "white-crested," "silver crested," "golden crested," &c.

THE FIRE-BACKED PHEASANT (*Galus Macurtnyi*).—A splendid and magnificent bird, destitute of comb, but with a delicate tuft of feathers on the crown of the head; very wild, and a native of the forests of Sumatra. With a variety of others of less note.

Viewing the whole of the species and varieties under one generic aspect, the following summary will include the characters common to all.

They are granivorous, but not, however, in such a degree as to compel them to feed exclusively on grain. They will eat, and are even fond of animal substances; and it is, perhaps, owing to this circumstance, with some others, that they are so well adapted for domestication. The bill is short, strong, slightly curved, and admirably formed for the purpose of picking up small seeds and grains. Resaumur remarks, that "a spectator who shall have any notion of anatomy, will admire the motion of the bills of these birds, which takes in but one grain at a time, but who repeat the stroke of the bill with so much exactness and rapidity, that they are able to fill the crop in a very short time, be the grains ever so small." But perfect as the structure of the bill is, it would be useless without great acuteness of vision. We all know the difficulty of "finding a needle in a bottle of hay," but these birds have a more arduous task to perform, and yet accomplish it with ease and precision. The brilliancy of a fowl's eyes is proverbial—they are strongly sighted, and with these microscopic guides, the smallest seeds, as they lie hidden in the refuse of the farm yard, or the mossy surface of the woods, are instantly detected, and snap up with an unerring aim. A cock investigating a dung-heaps, is quite as wonderful a sight as any which the piercing vision of the bald eagle or the hawk can exhibit. The structure of the viscera is in strict accordance with the eye that sees, and the bill that picks the hidden grain. All gallinaceous birds have a gizzard, or corn-mill, as it might be termed, in which the swallowed seeds are ground before entering the stomach for digestion. This function is performed by the action of two strong muscles, which are placed face to face, and crush the seeds in their passage between them; the action of these muscles call into action a number of little salivary glands in their vicinity, which complete the preparation of the seeds for the stomach, by pouring upon, and mixing with them, a strong dissolvent fluid. Thus is the want of mastication by teeth and jaws admirably compensated. After the crushed and softened seeds have undergone several chemical changes in the stomach, they are carried into the intestines, which in fowls, as in all vegetable feeders, are of considerable length, in order that by longer exposure to the digestive process, the difficulties of assimilating the vegetable matter may be more completely overcome, and the greatest possible quantity of nutriment extracted.

Fowls are usually bulky in the body, with short wings, which makes their flight heavy. We have been sometimes amused with the attempts of a well-fed cock to fly over a hedge, which separated him from his hens, but which, notwithstanding his vigorous efforts and fiery zeal, the weight of his body, and the smallness of his wings, combined to forbid. The low and labouring flight of the pheasant frequently gives the sportsman "a hit," when a "miss" would be a better representation of his skill, and a more suitable reward to his heartless pleasures.

The legs and feet of all the family are strong, and well contrived for scratching up loose surfaces, and may be regarded as very beautiful appendages to the eye, and bill, in the procreation of food. They usually roost upon one leg, the thigh of which becomes more fleshy, and, as epicures inform us, of a finer flavour than the other.

Great beauty of plumage belongs to the wild species, and also in a lesser but still charming degree, to the domestic varieties. The splendid hues which tinge the feathers of a cock's neck and tail, as he paces the sunny meadow, are matched only by the metallic lustre of the birds of Paradise. If we did but know it, we have little need to go abroad for novelties, unless indeed it be to look at ourselves when we get there.

The disposition of these birds is gallant, sociable, and affectionate. They fight their enemies with conquering energy, and

will frequently meet death rather than defeat. They love society, are gregarious, living happily together in large flocks, although the peace is frequently broken by the jealous battles of the males. The strong affection and tender care which the hens display for their young are subjects of universal eulogy, and have afforded both sacred and profane writers, with many touching allusions:

Behold the hen, that, white with falling snows,
Around her brood her fostering pinions throws,
And combats in their aid the wintry skies,
Till, pierced by cold, she droops the head and dies.

The male birds are very affectionate in their attentions to the female, and so generous, than on finding a hoard of meat, they will call to the hens, and relinquish the whole in their favour. Bewick has thus beautifully described the conduct of the common cock; he says, "When surrounded by his females, his whole aspect is full of animation; he allows of no competitor; but on the approach of a rival, rushes forward to instant combat, and either drives him from the field, or perishes in the attempt. He is very attentive to his hens, hardly ever losing sight of them; he leads, defends, and cherishes them, collects them together when they straggle, and seems to eat unwillingly till he sees them feeding around him: when he loses them he utters his griefs aloud, and from the different inflections of his voice, and the various significant gestures which he makes, one would be led to conclude that it is a species of language which serves to communicate his sentiments."

This is briefly a statement of the more popular characters; for minuter distinction we refer to the birds themselves; recommending also a study of the different inclinations of the birds, considered in connection with their bodily forms, which are the principles of them; and in which, as in all other irrational animals, lies the distinction between them and a moral agent.

We terminate this article with an account of the economic uses of these interesting birds, and of the cruelties which, notwithstanding, have been practised upon them in an ignorant age.

Eggs.—A good hen will sometimes lay two hundred and fifty eggs in the course of twelve months, each of the average weight of two and a half ounces. The fluids of an egg consist of the "white" and the "yolk." The former has a near affinity to the coagulable part of the blood. The latter is composed of oil, albuminous matter; water, and a small portion of gelatine. Thus constituted, they yield a mild, demulcent, and strengthening aliment, well suited to consumptive persons. A nutritive restorative drink is prepared by rubbing the yolks of two or three eggs, and a little white sugar, with a pint or two of cold water, adding to it afterwards a glass of any light wine, with or without a little lemon-juice, to improve the flavour.

Some labouring persons find "hard-boiled" eggs agree with them better than in the soft or liquid state. But generally speaking, the lightest as well as the simplest mode of preparing them for the table, is to boil them only as long as is necessary to coagulate slightly the greater part of the white, without depriving the yolk of its fluidity.

In Egypt millions of chickens are annually hatched by placing the eggs in ovens heated to ninety degrees, and otherwise prepared for the purpose.

Eggs can be kept fresh any length of time by rubbing over the surface of the shell with a small portion of grease.

FEATHERS.—These supply us with an invaluable material for our beds, couches, &c., &c., and are a profitable article of trade. They should be plucked as soon after the death of the bird as possible. Sometimes living birds are plucked, but this is an odious practice, and ought to be curbed by legislative punishment.

The flesh of these birds affords a delicate and wholesome food. The young bird or chicken, and the capon, are most esteemed. Both are nutritive, and easily digested. Chicken broth is diluent and restorative, and is a very useful drink in diarrhoea, and other disorders of the stomach and bowels. The concentrated decoction yields an excellent jelly.*

Various methods are resorted to for prematurely fattening fowls, and some of them of a most cruel and unjustifiable character, such as "cramming by confining in a box the size of the body, and allowing the head and tail to project; of blinding the bird for this

purpose, or of nailing it to a board; and also the mode of forcing down liquid food by a particular kind of pump, worked by the feeder, all these and other cruel practices we wish we could abolish in practice, and obliterate from the printed page."—*Sc.*

Oakingham, in Berks, is famous for fatted fowls. The fowl are sold to the London dealers, and the sum of £50. has been returned in one market-day by this practice. At some seasons fifteen shillings have been paid for a couple.

INSECTS.

The approaching winter having stripped the vegetable races of their foliage, most insects, as we have seen in our article on Torpidity, have passed from active life into a six-months' slumber; a few winter gnats, an occasional flesh-fly, a dor-beetle, a red admiral butterfly, and some moths peculiar to the season, of which the following is a list, are all that adorn the country walk; but few as these are, their history is more than sufficient to occupy the month Where Omnipotence is concerned, knowledge must be abundant.

BORDERED NOVEMBER MOTH (*Operobia dilutata*).

NOVEMBER DAGGER MOTH (*Diurnea Novebris*).

DRAB DAY MOTH (*Diurnea phryganella*).

WINTER MOTH (*Cheimatobia brunata*).

COMMON FLAT-BODY MOTH (*Depressaria aplana*).

BOTANY

"But sometimes let me leave the noisy roads,
And silent wander in the close abodes,
Where wheels ne'er shake the ground; then pensive stray,
In studious thought, the long unrowded way."

The wind moans with a sullen cadence among the withered leaves; at every breath the dead stems of the summer plants, now more pliant to the breeze, crack with a harsh and rigid sound; and

— All the pride
Of the sweet garden fades...

A few winter gnats gambol by the side of the woodland thicket, in melancholy mazes, and sadly tell, that

— All else are hushed.
The very bee her merry toil foregoes,
Nor seeks her nectar, to be sought in vain.

Here and there, however, a blue-bell will sometimes peep from the hedge bank; the everlasting groundsel of which it has been said

Though winds do blow,
And skies do lower,
Still you will find
The groundsel in flower.

meets us in bud, flower and seed at every step; an occasional daisy with closed florets; and very appropriately a DEAD-nettle, proclaim the departure of the season; and though these are beautiful themselves, they seem to afford us no pleasure; and are looked at only as we would survey the white edgings of a virgin's coffin pall. One only flower stands as an exception, the Scented Coltsfoot (*Tussilago fragrans*), this is in season; and as it rears its sweetly smelling flowers from its decaying leaves, we can almost imagine it to say to Flora's deserted empire

* Farewell! ye perishing and perished flowers,
Ye shall revive when vernal skies are blue!

THEORY OF WINDS

The hollow winds begin to blow,
The clouds look black, the glass is low.

DARWIN.

THE "great globe which we inhabit," is wrapped in "circumambient air;" on every side she is covered to the depth of sixty

Lewdon's Encyc. Poultry.

miles with a breathing atmosphere, in which kings and equally immersed, and on which they mutually depend. This vast aerial ocean keeps faithful company with the earth, in her annual revolution round the sun; and as she, year after year, "upon her axis spinning sleeps," it also keeps still closer company, and by the laws of gravity, partakes of her motion, and, with her, performs her daily revolution. The earth does not revolve in the atmosphere, but with it: had it been otherwise, the friction between the air and the earth, would have ground the living world to atoms. The air is highly elastic; it is exceedingly susceptible of motion — and from the creative morning till the present hour, it has been in some part or other of its wide domain in a state of restless commotion. These motions are known under the name of winds, a name that speaks of many vicissitudes, and brings to mind the sweetness of the summer zephyr, the wildly-rushing desolation of the Indian tornado, the hot and pestilential sirocco, the fresh breeze of northern oceans, or the last convulsive breath of a dying friend.

Heat is the principal cause of winds. It must be evident, that as the rays of the sun descend *perpendicularly* on the earth under the torrid zone, that in those regions a much greater quantity of heat must be communicated, than in the more oblique countries towards the poles. The heat thus acquired warms the air, and causing it to ascend, the vacuum which follows is immediately filled from the north and south, which, being of a cold nature, the fierce heats of the equatorial regions are so modified as to become bearable. Thus, two winds, north and south, would be generated; but these would be afterwards modified and changed. For example: the diurnal motion of the earth gradually lessens to the poles from the equator, where the motion is at the rate of fifteen geographical miles in a minute; and as that motion is communicated to the atmosphere in an equal degree, it is evident, that if part of it was conveyed suddenly from a temperate latitude, it would not directly acquire the velocity of that at the equator, consequently the earth would outstrip it in speed, and as it moves from west to east, the mountainous ridge would strike against it, and driving it forward, an east wind would be the result. Land and sea breezes, trade winds, regular and variable winds, are all accountable for on the above principle, modified, however, by various other influences, such as the motions of the sea under the guidance of the moon, chemical changes in the elementary constituents of the atmosphere, &c., &c., &c.

The prevailing winds of our own country, as they were ascertained on a comparison of many years, by the Royal Society of London, at London, are

WINDS.	DAYS	WINDS.	DAYS.
South-west	112	Brought forward	273
North-east	58	South-east	32
North-west	50	East	26
West	53	South	18
		North	16
Carried over 273		Total 365	

In November, what are called whirl-blasts, or sudden gusts of wind, accompanied with hail, are not uncommon. Wordsworth has the following pretty couplets on the occasion.

But see! where'er the hailstones drop,
The withered leaves all skip and hop;
There's not a breeze, nor breath of air;
Yet here and there and every where,
Along the floor, beneath the shade
By those embowering hollies made,
The leaves in myriads jump and spring,
As if with pipes and music rare.
Some Robin Goodfellow were there,
And all those leaves in festive glee
Were dancing to the minstrelsy.

THEORY OF CLOUDS.

We have reached a month of winds and clouds, the stormy messengers of complete winter. The canopy of heaven is clothed in

solemn drapery; the dark *nimbus*, or rain-cloud, is constantly forming, and pouring down its renovating treasures upon the exhausted soil. Let us, however, draw a little mental illumination from nature's darkness. The natural history of clouds is very curious, and is well calculated to beguile a long road of its

tedium; but, above all, to make us weather-wise, which in our variable climate, is as useful a possession as a "dreadnought cloak."

Clouds are masses of condensed vapour, more or less opaque, formed and sustained by different agencies, at various heights in the atmosphere. They have been classified and named as follows:



DIFFERENT FORMS OF CLOUDS

I. SIMPLE FORMS.

1. *CIRRUS*, or *CURL-CLOUD*, consisting either of white parallel lines, faintly penciled on the azure sky, or of bending, spreading fibres, starting from central points in all directions, and commonly called mare's-tails. (See cut A.)

2. *CUMULUS*, or *STACKED CLOUD*, a spreading, roundish kind of cloud, full of conical lumps, increasing upwards, from a horizontal base. (B.)

3. *STRATUS*, or *FALL CLOUD*, is of a foggy misty character, consisting of an extended, unbroken, horizontal sheet of vapour, increasing from below. (C.)

II. INTERMEDIATE FORMS.

4. *CIRRO-CUMULUS*, or *SONDER CLOUD*, a series of small, well-defined roundish masses, in close horizontal arrangement. (D.)

5. *CIRRO-STRATUS*, or *WANE-CLOUD*, usually horizontal masses, forming a low spreading cloud, thin towards its circumference. (E.)

III. COMPOUND FORMS.

6. *CUMULO-STRATUS*, or *TWAIN-CLOUD*, round-headed and mountainous in its appearance, and seems to be a combination of the *cirro-stratus* with the *cumulus*. (F.)

7. *CUMULO-CIRRO-STRATUS*, or *NIMBUS*, the *RAIN-CLOUD*; that form into which the other clouds resolve previously to rain. It is a horizontal sheet, above which the *cirrus* spreads while the *cumulus* enters it sideways, or from beneath. (G.)

The *Cirrus* appears low and thick before a storm, and usually in a quarter opposite to that in which the storm arises. Steady high winds are also preceded and attended by *cirrus* streaks, of a torn and scattered character, and sometimes in the direction of the wind quite across the sky.

The *Cumulus* has the densest structure, is formed in lower atmosphere, and moves with the current next the earth. In fair weather they will sometimes begin with a small lump at sunrise, increasing through the day, and dispersing at sunset. It is a sign of rain, and increases rapidly before a storm.

The *Stratus* is the lowest of clouds, its lower surface commonly resting on the earth. It is properly the cloud of night appearing about sunset, and comprehends all those morning mists which are usually the precursors of fine weather.

A constant intermixture of these forms takes place in the dull season, and if they be studied carefully, will soon enable a person to judge with tolerable accuracy of the nature of the coming weather. The final prevalence of a particular form will decide the fact. The *cumulo-stratus* precedes, and the *nimbus* accompanies rain.

MISCELLANEA.—The roe, the stag, and the sheep pair this month. The females and young of the brown and Norway rat, leave their holes at the sides of ponds and rivers, to which they had betaken themselves in the spring, and repair to barns, out-houses, corn-stacks, and dwellings. Rooks return early to their rookeries. Between three and four o'clock, on dark, still, mild November evenings, they may be seen returning in large flocks of several hundreds, accompanied by jack-daws. Sometimes starlings join them during the day, when all the three sorts may be seen feeding together. Cattle begin to grow fat. Bells are heard from great distances, the air possessing a singular power of conveying clear sounds.

THE GUIDE TO KNOWLEDGE.

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PRICE
ONE PENNY.

PICTURE OF GRAMMAR.



It is quite natural] to conclude, that when speech began to express the ideas of the mind, very few sounds sufficed for that purpose; such only as were proper to give a notion of certain feelings and necessities incident to a living creature: and those in a state of nature being limited to the mere preservation of existence, it would require but little variety in the tones or sounds of the voice to explain them, and still less in the use of words, the want of which was probably supplied by modulations of tone, and appropriate gestures. But when men multiplied on the earth, new feelings, new ideas, new objects, and new associations sprang up, demanding a more comprehensive mode of communication, and, consequently, an additional number of names, and terms. It is most likely, that the first effort of the human voice, was an expression of surprise and wonder; for it is impossible to suppose, that a being could start into life, see, hear, and feel, and view the scene of creation around, without some involuntary ejaculation; and, therefore, it seems analogous with reason to conclude, that an *Interjection* was the first part of speech uttered by man. The names of things would come next, agreeably to the history of the creation, as given by Moses, in the first chapter of *Genesis*; and then, such terms as were understood to describe the nature, quality, or kind of that particular thing that

might be alluded to, and whether *good* or *bad*, *fruitful* or *unfruitful*; thus would be united the *noun*, and its *adjective*; the *position* or *place* of an object would be required, in reference to its use or existence; so that some word would be invented to supply that necessity, either of the *adverbial* kind, or the terminations of the nouns themselves would be varied. In this latter case, the variation has been called *declension*, but modern languages substitute *prepositions*, for those declensions, or *cases of nouns*, that were used in the ancient tongues. *Verbs*, being used to demonstrate the theme, meaning, or intention of a phrase or sentence, and implying an agent and an object acting and suffering, are called active and passive, and these were doubtless the offspring of invention, in an advanced state of society. The other connectives or auxiliary parts of speech, such as *articles*, *pronouns*, *conjunctions*, and *prepositions*, are to point out, stand in the place of, unite together, or shew the relation between, things mentioned in the composition of sentences.

GRAMMAR is substantively the same in all languages. In ENGLISH we have nine sorts of words, or parts of speech; viz. the *Article*, *Noun*, *Pronoun*, *Adjective*, *Verb*, *Adverb*, *Conjunction*, *Preposition*, and *Interjection*; and these may all be defined, with a little attention, in common conversation, by reference to objects

that meet the eye, and circumstances connected with them,—for circumstances will often change the nature of a word from one part of speech to another, and this mutability can best be explained by evident demonstrations of a pictorial description. Previous to the invention of *letters*, men were obliged to convey their thoughts in this way, that is, by *pictures* or representations of things intended to be understood, and this method of communication was called *hieroglyphical*. It had then, and still may have its use, in the illustration of a subject, especially when verbal rules appear ambiguous, or are not thoroughly understood; but then, they had no other method, now we have *two*, and can make use of both.

Let us take, for instance, the figure of a *tree*. Now this is the *name* of the *thing* or *noun*, by which it is called, and is common to all trees; but as there is a variety in the species, if we would specify the kind, we must give it a proper name, as *Oak*, *Ash*, *Elm*, *Beech*, &c. these being the proper names respectively of each kind or sort. Again, there is a property, or quality belonging to each kind, such as *tall*, *short*, *small*, *large*, *crooked*, *smooth*, *rough*, &c.; and in these qualities, there is a comparison, as the *Oak* is *tall*, the *Elm* is *taller*, but the *fir* is *tallest*; here, we not only compare, but point out particular things by the *article* *the*, not *an Oak*, but *one* particular *Oak*; not *a fir*, or *any* *fir*, but this identical *fir* is *tallest* of the three trees presented to our view.

Suppose I ask where your tree shall be planted, the answer may be *before* the house,—then, what is *before* but a *preposition*, showing the relative situations or localities of the house and the tree? If I ask where your tree stands, you may say *without* the garden, or *within* the garden, in which case *without* and *within*, are adverbs of place; but, to say I will do *without* him, makes this *without* a *preposition*.

But take another object, such as a *horse*, and ask what he is doing; he is *grazing*, *trotting*, or *galloping*, all these being actions, are expressed by *verbs*; and those verbs require *adverbs*, to specify the manner in which the actions are performed; as *he grazes greedily*, *he trots neatly*, *he gallops swiftly*; here, also, we have another part of speech introduced; namely, the *pronoun* *he*, instead of repeating the *noun* *horse*, and thus we learn what a *pronoun* is, and its proper use.

Ask of what things we have been speaking; the reply will be, a horse and a tree; in this reply, the conjunction *and* is used, to join two things, which at once shows the use and place of that part of speech; in short, all the *nine parts of speech* may be pointed out and exemplified by conversation on any picture, or landscape; while the eye may be gratified, and the imagination entertained. By such a plan Etymological Parsing may be made a pastime to youth, instead of a dry, tedious, and tiresome study, and if used in *Classes*, would not require much time or trouble from the *Tutor*. PARENTS might use it by way of question and answer with great benefit to their children, and amusement to themselves.

It is not intended to offer this plan, as a complete system of Grammatical Instruction, but only as an introductory and easy way to lead youth into the knowledge of the parts of speech, by an amusing and pleasing kind of entertainment, instead of enforcing it by coercion, or the terrors of impeding punishment; however, so much being gained, the higher acquirements of systematical parsing, and the arts of composition, and structure of sentences, will be easily attainable.

Though the manner of conducting an exercise in this mode of discipline, belongs entirely to the discretion of the Tutor, and is more adapted to oral demonstration than to any written description; yet, an example may be given in a sort of question and answer, as follows:

TUTOR. Now let us have a design, or imaginary picture;—what shall we put into it?

1st Boy, a *house*;

2nd boy, a *tree*;

3rd boy, a *dog*;

4th boy, a *cow*;

5th boy, a *swan*;

6th boy, a *pond*, &c.

TUTOR. Very well, now remember each of the things you have chosen is a *noun*, (here explain it).

QUEST. Pray what sort of a house is your's to be?

1st Boy, a *small house*;

And your tree!—2nd boy, a *large tree*:

And your dog?—3rd boy, a *black spotted dog*:

And your cow?—4th boy, a *spotted cow*:

Your *swan*?—5th boy, a *white swan*:

Your *pond*?—6th boy, a *deep pond*.

TUTOR. Observe each of you, that what you apply to your NOUNS, are *adjectives*, or *qualities*; namely, *small*, *large*, *black*, *spotted*, *white*, *deep*.

QUEST. Pray what is your *house* for? and your *tree*? and your *dog*? and your *cow*? and your *swan*? and your *pond*?

ANSWER. 1st boy, *to live in*;

2nd boy, *to grow tall*;

3rd boy, *to guard the house*;

4th boy, *to give milk*;

5th boy, *to please the sight*;—*to breed young*;

6th boy, *For the swan to swim in*.

TUTOR. Observe, you have now added VERBS to your nouns and adjectives,—for *live*, *grow*, *look*, *ride*, *breed*, *swim*, are all verbs, implying an action, and as used here, are in the *infinitive mood*; (these explain the properties of the *VERB*, as regards *active*, *passive*, and *neuter*. See English Grammar).

QUEST. From what will your house protect you? and your tree? and of what use is your cow? and can your pond be put to no better use? &c.

ANSWERS. 1st boy, the house protects us from rain and cold;

2nd boy, the tree from the sun and wind;

3rd boy, the cow for her milk; and her hide and horns for leather and combs;

4th boy, the pond may be stored with fish.

TUTOR. Again, you have brought in another part of speech; namely, the *Prepositions*, *from*, *to*, *for* and *with*; and also the conjunction *and*.

This GAME at GRAMMAR, or *Play at PARING*, might be extended to any length, and being often practised, would supersede the drudgery of learning rules by rote, which are little understood, and seldom practically applied by children, or even by adults. If there seem any difficulty, it is only in the novelty, which will cease only in the progress.

ALMANACKS.

An Almanack is a well known annual publication, either in a single sheet, or in the form of a book, in which the revolution of the seasons, the remarkable days, the rising and setting of the Sun, Moon, their Eclipses, the motions of the Planets, and many other interesting particulars are noted for the ensuing year.

The word is supposed to be of Arabic origin; but whether it be from *al* and *manach*, to count, or *al* and *men*—months, or *manakos*, the course of the months, is not agreed; some give it a Teutonic

origin, from the words *al* and *moan*, the moon; each of these conjectures is plausible.

As the *Arabs* were greatly addicted both to *Astronomy* and *Astrology*, it is highly probable, that both the thing and the name originated with them. But, the first *Almanack* that ever appeared in Europe, was published in 1474, by a learned Professor of *Konigsberg*, whose assumed name was *Regiomontanus*; it was nearly in the same form in which they now appear, giving the regular *Calendar*, the *Eclipses*, motions of the *Planets*, &c. The number published in Great Britain is at present very great, of which the most popular is that entitled *Moore's*; chiefly on account of its pretended prognostics of future events, to which many weak persons give implicit credit.

In 1767, commenced the publication of the *Nautical Almanack*, under the direction of the Commissioners of Longitude. It contains the usual *Calendar*, and many additional and useful particulars, more especially the distances of the *Moon* from the *Sun*, and fixed stars, for every three hours of apparent time, adapted to the meridian of Greenwich; by comparing which with the distances carefully observed at sea, the mariner may readily infer his longitude to a degree of exactness that is found sufficient for most nautical purposes.

OF THE ORIGIN OF THE DIVISION OF TIME.

Before the death of *Jacob*, which happened 1689, b.c., we find that several nations were so well acquainted with the revolutions of the *Moon*, as to measure by them the duration of their year. It had been an universal custom among all nations of antiquity, as well as the *Jews*, to divide time into a portion of a *week*, or *seven days*; this undoubtedly arose from the tradition with regard to the origin of the world. It was natural for those nations, who lived a pastoral life, or who lived under a serene sky, to observe, that the various appearances of the moon were completed nearly in four weeks; hence, the division of a *month*. These people again who lived by agriculture, and were acquainted with the division of a month, would naturally remark, that twelve of these brought back the same temperature of the air, or the same seasons; hence the origin of what is called the *lunar year*, which has every where taken place in the infancy of science. This, together with the observations of the fixed stars, (which we learn from the book of *Job*, who, according to the best writers, was contemporary with *Jacob*,) must have been very ancient, and naturally paved the way for the discovery of the *solar year*.

OF THE ROMAN CALENDAR.

THE ROMAN CALENDAR was imposed by *Romulus*, the founder of *Rome*, about 716 b.c., who divided the year into ten months, the first of which was *March*, then *April*, *May*, *June*, *Quintil*, afterwards called *Julius*, and *Sextil*, afterwards called *August*; then *September*, *October*, *November*, and *December*.

To *March*, *May*, *Quintil*, and *October*, he gave each 31 days, and 30 to each of the other six, making together 304 days. *Numa Pompilius*, second king of Rome, about 669 b.c., reformed this Calendar, and imitated the *Grecian*, to allow the year twelve lunar months of thirty and twenty-nine days each, alternately, which made the year 354 days.

Numa would have the month of *January*, which he placed at the winter solstice, to be the beginning of the year, and not *March*,

which *Romulus* placed at the equinox of the spring. The months added by *Numa* were *January* and *February*.

The confusion and disorder which was occasioned by this division of the year, was so great in the time of *Julius Caesar*, that after the battle of *Pharsalia*,* which happened b.c. 48, he looked upon the reformation of the *Calendar* as not unworthy his attention. Accordingly, he sent for the famous astronomer *Sosigenes*, from *Alexandria*,† who ordered the year according to the course of the *Sun*, and composed a *Calendar* of 365 days, leaving out the six hours to form a day at the end of every fourth year, which day was to be inserted in the month of *February*, after the 24th of that month, which the *Romans*, according to their way of counting, called the 6th of the *Calends*. The difference of time, at the period of the reformation, was no less than *ninety* days: the next year, therefore, was constituted of *fifteen* months, or 441 days, and was called the "Year of Confusion." This reformation was made *forty-five* years b.c., and was introduced the year following. In this form did the *Calendar* and account of time stand till the introduction of the *Gregorian Calendar*.

When the *Romans* give us any date to their historical facts, they always reckon from the building of the city of *Rome*, and this is generally accompanied with the names of the consuls of that year. *Rome* was built 753 years b.c.

The *Romans* have a peculiar manner in reckoning the days of their months. They proceed in a retrograde order, and which to us has an awkward appearance. Each month has *three* remarkable days; namely, the *Calends*, *Nones*, and *Ides*, which break the months into three unequal divisions.

The *CALENDIS* is the first day of every month; and in the months *March*, *May*, *July*, and *October*, the *NONES* are on the 7th, and the *IDES* on the 15th; and in all the other months the *NONES* are on the 5th, and the *IDES* on the 13th.

All the other days belong to some one of these divisions, and are reckoned in the following manner:

The 1st of April, for instance, is the *Calends* of April; the 31st of March, the day before the *Calends* of April; the 30th of March, the 3rd of the *Calends* of April; the 29th the 4th; and in this manner retreating backward, till we arrive at the 15th of *March*, which is the *IDES* of *March*; the 14th, the day before the *IDES*: the 13th, the 3rd; and so backward till we come to the 7th, which is the *NONES* of *March*; the 6th—the day before the *NONES*, and so on till we come to the *Calends*.

THE NAMES GIVEN TO THE MONTHS BY THE ROMANS.

JANUARY, the first month, was so called from *Janus*, an ancient king of Italy, who was deified after his death, and is derived from the Latin word *Januarius*.

FEBRUARY, the second month, is derived from the Latin word *Februi*, to purify, hence *Februarius*; for in this month the ancient Romans offered up expiatory sacrifices for the purifying the people.

MARCI, the third month, anciently the first month, is derived from the word *Mars*, the god of war.

* *Pharsalia*, a town of Thessaly, in Greece. The above battle was fought between *Julius Caesar* and *Pompey*, in which the former obtained the victory. *Cesar's* loss was about 1200 men, *Pompey's* was 15,000, or according to others, 25,000; and 24,000 of his army were made prisoners.

† *Alexandria*, was the name of several cities which were founded by Alexander the Great, during his conquests in Asia, but the one named above, was that he founded in Egypt, on the western side of the *Delta*, which was long its capital.

* *Nautical*, belonging to sailing or sailors.

† *Meridian*, a line drawn from north to south, which the sun covers at noon. Figuratively, the highest point of glory or power.

APRIL is so called from the Latin *Aprilus*, i.e. opening; because in this month all things are, as it were, opened and budded.

MAY, the fifth month, is derived from the Latin word *Majores*, so called by Romulus in respect towards the Senators: hence *Maius*, or May.

JUNE, the sixth month, from the Latin word *Junius*, or the youngest sort of the people.

JULY, the seventh month, which was anciently the fifth month from March, and thence by Romulus called *Quintil*, is derived from the Latin word *Julius*, and so named in honour of Julius Caesar.

AUGUST, the eighth month, which was the sixth month from March, and for that reason called, by Romulus, *Sextil*, was so called in honour of Augustus, by a decree of the Roman Senate, A.D. 8.

SEPTEMBER, the ninth month, from the Latin word *Septem*, or seven, being the seventh month from March.

OCTOBER, the tenth month, from the Latin word *Octo*, the eighth; hence October.

NOVEMBER, the eleventh month, from the Latin of *Novem*, nine, being the ninth month from March.

DECEMBER, the twelfth month, from the Latin word *Decem*, ten; so called because it was the tenth from March, which was anciently the manner of beginning the year.

Although we retain these names given to the months by the Romans, their successors, our Saxon progenitors, gave to them names more significant.

JANUARY was expressed by a Saxon word, signifying Wolf-month, because in that month wolves were most mischievous to them, for that, through the extremity of cold and snow, they could not find beasts sufficient to satisfy their ravenous appetites.

FEBRUARY was expressed by a Saxon word, signifying Cole-wort, or Spring-wort; because then the worts begin to sprout.

MARCH was called the lengthening month; because then the days begin in length to exceed the nights.

APRIL was signified by a word implying the Easter month; because their Easter generally fell in April.

MAY was called the three milkings; because they then milked their cattle three times a day.

JUNE was called the Meadow-month; because then they turned their cattle out to feed in the meadows.

JULY was called the Hay-month; because then they generally cut their hay.

AUGUST was called the Barn-month; for in this month they generally filled their barns.

SEPTEMBER was called the Grist-month; for in this month they carried their new corn to the mill.

OCTOBER was called the Wine-month; for then grapes were usually pressed to make wines.

NOVEMBER was called the Windy-month; because of the high winds happening commonly in that month.

DECEMBER was called the Winter-month; because of the cold then growing intense; and afterwards the Holy-month, on account of the nativity of Christ.

THE JEWISH COMPUTATION OF TIME.

The first division of the day was into morning, noon, and night; and these are the only parts of a day mentioned in the *Old Testament*. But it is however probable, that men of science had other more accurate divisions, because we find they had sun-dials. Afterwards, they divided their days into twelve hours; and to this division our Saviour refers when he says, "are there not twelve hours in the day?" But their hours must have

been of different lengths, at different seasons of the year; for their hour was a twelfth part of the time the sun continues above the horizon. And as this time is longer in summer than in winter, their summer hours must therefore have been longer than their winter hours. This difference, however, would not be so very sensible in that country as here, as JUDEA is much nearer to the Equator than we are, and the days there, in consequence, nearer equal. Their hours were computed from sun-rise: their *third hour* divided the space between sun-rising and noon; the *ninth hour* divided the space between noon and sun-set. But in the *New Testament*, we find that they sometimes made use of the Roman reckoning of their hours.

The Roman reckoning was the same as ours, beginning at midnight, and reckoning to noon, twelve hours; and again from noon to midnight.

The *Hebrews* divided their night into four watches of three hours each. The *first* from six to nine in the evening; the *second* from nine to twelve; the *third* from midnight to three in the morning; and the last to six or sun-rising.

THE MAHOMETAN YEAR.

The Mahometan Year consists of twelve lunar months, each containing 29 days, 12 hours, and 792 scruples;* so that the year contains 354 days, 8 hours, and 864 scruples. In order to reduce this year to an integral number of days, a *cycle* of thirty was chosen as the most convenient period; because thirty times eight hours, and 864 scruples amount exactly to eleven days; and in this cycle there are nineteen years of 354 days, and eleven of 355 days.

The *Mahometan Hegira* commenced on Friday, the 16th of July, A.D. 622: and the 538th year of the *Hegira* began Friday, July 16th, which is the same day of the month and week that the *Hegira* commenced; and this corresponds to the year of our Lord, 1143; so that 521 of our years are equal to 537 Turkish years.

THE CHINESE CALENDAR.

The *Chinese* divide the night and day into twelve equal parts, beginning their reckoning from midnight. Hence their hours are double the length of ours.

The common Chinese year consists of twelve lunar months, and their intercalary year has thirteen. Their months have no subdivision; that is, they have no weeks. Their common way of dating is by the day of the month, and the year of the reigning emperor. As for example, they say *fifth* of the sixth *Moon*, in the twelfth year of *Kia-king*. They have a cycle of sixty years; but this is made use of only in books, and by the literati. The cycle of nineteen years is used by those who regulate the calendars. The Moon, with which their year commences, is that which falls nearest to the fifteenth degree of *Aquarius*, corresponding to the third or fourth of February. The *Chinese* date the commencement of their spring, the instant the *Sun* enters this degree; when they wish each other a happy new year, and say, "The spring is begun, I give you joy."

The *Chinese* have no particular days for religious worship. Their great festival is the first of the year, on which day they shut up their shops, dress in their best clothes, and pay visits.

* 1,080 scruples make one hour.

† *Cycle*, a term in chronology, is a certain period or series of years, which regularly proceed from the first to the last, and then return again to the first, and circulate perpetually. The *cycle* of the sun consists of twenty-eight years; of the moon, nineteen years; the *Roman* indiction, fifteen years.

‡ Duhale, however, asserts the contrary, but incorrectly.

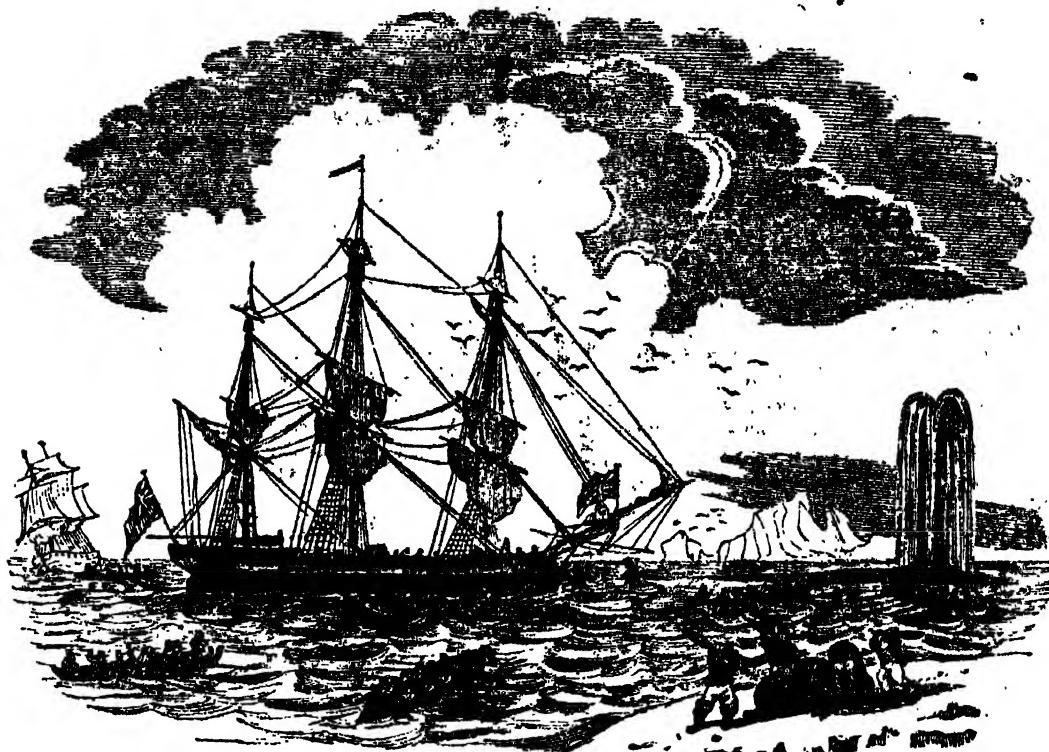
THE WHALE FISHERY.

Hugest of living creatures, on the deep,
Stretch'd like a promontory, sleeps, or swims,
A vast unsightly mass; and at its gills
Draws in, and at its snout pours forth a stream.

MILTON.

In a commercial point of view WHALES are of very great importance, supplying us with oil and whalebone, and also spermaceti. They are chiefly taken in the North seas, about *Iceland* and *Greenland*. The English send out a fleet every year for the purpose of catching them. This fleet usually sails about the end of March, and they begin to fish in May.

The art of taking whales, like that of most others, owing great improvement to experience. The ships proper for this kind of commerce are allowed to be those of about 300 tons, which are generally stored for six months' provisions, and manned with about fifty men and boys. When arrived at the spot where the whales are expected, a sailor is always stationed at the mast-head; and, as soon as he discovers one of these enormous animals, the rest of the crew hoist out their boats and row to the place which he directs. The harpooner stands at the head of the boat, with the harpoon ready for striking in his hand, to which is fastened a cord of several hundred fathoms, which runs over a swivel at the edge of the boat. As soon as he arrives within reach of the animal, he



GREENLAND WHALE FISHING.

darts the harpoon into its sides, which is pointed with steel, like the barb of an arrow, six feet long, and of a triangular shape. As the fat which covers the body is not susceptible of pain, it is some moments before the creature becomes sensible of the wound; but, as the harpoon penetrates towards the muscles, it begins to feel the effect of the most agonizing pang, and it instantly dives with an impetuous motion, in the hope of evading the attack of its foes; want of air at length brings it again towards the surface, when several harpoons successively are thrown, until the surrounding waves are totally discoloured, and the exhausted animal in agony expires! The rope in the harpoon prevents it from sinking, and is fastened to the boat with an iron chain. The poor animal is then cut into different pieces, and proper means adopted for extracting the oil.

In 1802, Captain Lvoxs, having discovered a large whale near his ship on the Labrador coast, dispatched four boats in pursuit, when two of them succeeded in approaching it so closely together, that two harpoons were struck at the same moment. The fish descended a few fathoms in the direction of another of the boats, which was on

the advance, rose powerfully beneath it, struck it with its head and threw the boat, men, and apparatus, about fifteen feet in the air.

A large whale is worth about 1000*l.*; and a full ship of three hundred tons burden, will produce more than 5000*l.* from one voyage. The year 1814 was an unusually prosperous one. Seventy-six British ships procured 1437 whales, besides seals; the produce of which, in oil only, was 12,132 tuns, and the gross value of the freights was estimated at about 700,000*l.*

The principal British ports that are concerned in the whale-fishery, are those of *London*, *Hull*, *Leith*, and *Aberdeen*.

The fishing season begins in *May*, and continues through the months of *June* and *July*: but whether the ships have had good or bad success, they must come away and get clear of the ice by the end of *August*; so that in the month of *September*, at furthest, they may be expected home. The more fortunate ships, however, often return in *June* or *July*.

WHAT IS KNOWLEDGE?

This is a question that has been frequently asked, but, perhaps, never satisfactorily answered; yet it is a question, which, of all others, those who pretend to disseminate KNOWLEDGE are most bound to resolve. If we profess to offer any thing for the benefit of mankind, it is reasonable that we should show how the professed advantages accrue, and what it really is, by which they are to be acquired. Some persons will refer us to the wise sayings of the ancient philosophers, and, taking "*Nosce te ipsum*" as a text, and as a first step to KNOWLEDGE, they unwarily involve us in a mystery more inexplicable than that which seems to envelope the original inquiry; such a reply is but an evasion, and can only cause a repetition of the question, namely, "*What is it to know yourself?*" Besides, with great deference to those who use this maxim, instead of being the first, it is commonly the very last, step we take towards the "TEMPLE OF KNOWLEDGE," and we must ascend by many degrees, before we venture to look down and discover the mist beneath us, that once shrouded our perceptions and excluded the sunshine of reason from the eyes of our understanding. It has been observed, that to ask "*What is beauty?*" is the question of a blind man; and by the same rule it has been inferred, that to ask "*What is knowledge?*" must be a question of the entirely ignorant: but, that this is a false comparison will appear from the fact, that whatever is beautiful, may be near the sight and closely inspected, while KNOWLEDGE is far distant from the view, and towards which we must approach with some labour before we can define its true nature and composition. Previous to a statement of what constitutes, and what knowledge really is, it may help our purpose by noticing *what it is not*.

Book-learning is one of the materials, but it is not KNOWLEDGE of itself. Reading, study, and acquaintance with the living and dead languages, are also materials, but they are not KNOWLEDGE *de facto*; they are only ingredients, to make up the prescriptions; all these qualifications, disunited, are beads unstrung, or parts unconnected; they are the wheels, main-springs, movements, and pinions of the "*Time Teller*"; but, not any one, or all of them together, will effect the purpose of that instrument, if not judiciously combined.

It is therefore with KNOWLEDGE as it is with the mechanical arts; a combination of parts so suited and applied as to produce something useful to mankind, tending to promote the happiness of our species, and enlarge the social boundaries and enjoyments of human life.

KNOWLEDGE enables us, by the examples with which we become acquainted, through historical and biographical readings, to think, and feel, and act with propriety, sensibility, and dignity; such as we appreciate and admire in the characters and deeds recorded.

KNOWLEDGE guides us to the paths of rectitude, sobriety, and diligence in our proper avocations, and by convincing us of our own infirmities, teaches charity towards the foibles of others.

KNOWLEDGE removes prejudices, and while it claims our rights, it curbs licentiousness; it maintains and supports the scale that holds an even balance between self-esteem and subordination, so that the one shall not diverge into arrogance, nor the other into slavishness.

KNOWLEDGE teaches us to know that the sum of human happiness consists of the contributions that individuals bring to the aggregate amount of industry, honesty, and benevolence, and that it is the duty of every one to augment this fund as much as possible, whether others do so or not; convinced as we all must be,

that were this conviction universal, and undeviatingly followed, the condition of society would be greatly improved.

KNOWLEDGE exhibits to our view the evil of indulging the bad passions, and the wicked inclinations of our nature; it shows to avarice the uncertain tenure of riches; it points out the folly of pride; and, it exposes the heinousness and terrific character of revenge.

KNOWLEDGE teaches the duty we owe to our neighbour; it also inculcates universal philanthropy, and not only shows what is right, but urges to the performance thereof.

Above all things, KNOWLEDGE shows us the proofs that establish an indisputable belief in the being of a *true God*, and convinces us, that the whole CREATION, insensible and intelligent, should be devoted to his honour and glory, and that man, in lowly reverence should humbly endeavour to imitate His unbounded kindness and most gracious MERCY.

If any lay claim to KNOWLEDGE, and do not feel a disposition for the actual exercise of the preceding virtues, his claim is fallacious, it does not stand the test; his KNOWLEDGE is not intrinsic; it is like the dust of a summer's day, blown off by the slightest breeze of passion, it hovers as a shadow, but is unsubstantial as a dream; it affects the brain like a phantom, but brings no solid advantages until it takes possession of the HEART.

THE NATURAL HISTORY OF REMARKABLE TREES, SHRUBS, AND PLANTS.

INTRODUCTION.

Not a tree,
A plant, a leaf, a blossom, but contains
A folio volume.—We may read, and read,
And read again; and still find something new,
Something to please, and something to instruct,
Even in the humble weed.

BEFORE we enter upon the description of particular plants, it will be proper to make a few general observations upon vegetables, and their mode of production. It will serve, besides, to call forth our admiration and gratitude to the Almighty, for, in every step of the inquiry, we shall trace his power, wisdom, and goodness.

The first of those contrivances by which NATURE provides for the safety of the future vegetable is to be observed in the structure of the seed. Every one of these is furnished with a different sheath, which protects it from injury till it is lodged in the Earth. Thus shut up and secured, the seeds are turned over, tossed in sacks, measured, and heaped together, and all without danger. Some of these are placed i. the very heart of the fruit, as in apples; others grow in shells or pods, as peas and beans; a third, besides their being shut up in the fruit, is furnished with a wooden shell, as the almond, &c.; others besides their wooden shell, have a bitter rind, as the walnut, &c. We may next remark the manner in which those seeds escape from their enclosure; while shut up, they can be of no service, since the same over-covering which guards them from injury, also prevents them from growing. The difficulty, however, is removed by the power of NATURE, and nuts and shells, which even our teeth cannot penetrate, will gradually divide, and make way for the little tender sprouts which proceed from the kernel. Another instance of the care with which Nature guards against failure, is to be observed in the mode in which the seed strikes into the ground. No matter in what direction it shall fall, the root will always strike downward, and the bud will find its way upwards into the air. From one end of the grain issues a green sprout, from the other a number of fibrous threads. How can this

be explained? Why not sprouts to both ends? Why not fibrous threads from both ends? To what is the difference to be referred, but to the wise design of Providence, to the different uses which the parts are therefore to serve, and which discover themselves in the sequel of the process. The sprout struggles into the air, and becomes the plant, of which from the first, it contained the rudiments; the fibres shoot into the Earth, and thereby both fix the plant to the ground, and draws nourishment from the soil for its support. Now, what is not a little remarkable, the parts issuing from the seed take their respective directions, into whatever position the seed itself happens to be cast. If the seed be thrown into the most unnatural position, that is, if the ends point in the ground, the reverse of what they ought to do, every thing, nevertheless, goes on right. The *sprout*, after being pushed down a little way, makes a bend and turn upwards; the *fibres* on the contrary, after shooting at first upwards, turn down. Without this provision of Providence, the toil and labour of the husbandman would be in vain; if the harvest were to depend upon the position in which the scattered seed is sown, not one in an hundred would fall in a right direction. This is most curious; for though, almost all plants rise a little crooked, and will even go out of the way to avoid any obstacle in their passage to the surface, and will even make a second bend or elbow if necessary, yet afterwards, they will shoot up straight, never leaving the ground in an inclined direction. This singular circumstance, like many others, is looked upon every day without surprise, because we are not accustomed to attend to the *Wonders of Nature*.

The different vegetable productions are, also, no less numerous than useful. The purposes to which our native trees are applied are well known, from the *Willow* that forms the *basket*, to the *Oak* which forms the *ship* that is to bring us the produce of the most distant countries. Each possesses different qualities, and is applied to different purposes: the meanest have their use; even the *Thistle* is not only the food of the patient *ass*, but is serviceable in making *glass*. There is scarcely a plant which, although rejected by some animals, is not preferred by others. The horse leaves the common *water hemlock* to the *goat*; and the *cow*, the *long leaved hemlock* to the *sheep*. Some plants, as *rhubarb* and *opium*, relieve the pains of disease; and others, like *Peruvian bark*, are given in a fever. Where the heat of the climate prevents wheat from growing, its place is well supplied by the *bread fruit*, the *cassavi root*, and *maize*, and more particularly by *rice*, which is the common food of a great part of the immense population of Southern Asia. The wild pine of Campeachy retains the rain-water in its deep leaves, not less for the refreshment of the tree itself, than of the thirsty native. A tree also has been lately discovered in South America, the juice of which affords a nourishing *milk*, and from this circumstance, it has been named the *Cow tree*. The travellers who mentioned it were informed that the negroes always acquire flesh at the season when the *Cow tree* yields the greatest quantity of the sap, and prefer it to animal milk.

The *Cocoa* of the West Indies answers many useful purposes. The whole of Lapland is too barren, and the climate too severe for the growth of corn; but as a compensation, the surface of the ground is covered with a low and stunted moss, which the *reindeer* digs from beneath the snow in winter; and thus, this animal, which gives food and clothing to its owner, is supported. On the bleak mountains of the same country, the *pine*, the *fir*, and many resinous trees grow, shelter man from the snows by the closeness of their foliage, and furnish him in winter with torches and fuel. It is thus we discover the ALMIGHTY CREATOR of all things in his works. We cannot with our earthly sight behold his presence,

but we can every where trace his benevolence and wisdom; whenever a plant takes root, or an animal appears, there we discover His workmanship; and we should ever recollect, that they were not formed by him to be looked on with a careless, or inattentive eye; but, that discovering the marks of his Almighty power, and of his benevolence to man, we should learn from them a constant reverence for the DEITY, and a steady and hearty obedience to his LAWS.

THE THAMES.

In acquired importance, no river in the world can equal the THAMES; from its first rise in the borders of Gloucestershire (as represented in the engraving), where the stream may be stepped over by a child, it becomes more and more beautiful, winding through the most lovely valleys and fertile meadows, occasionally ornamenting the parks and pleasure-gounds of elegant mansions, situated near its banks, and receiving the homage of minor streams that come to meet their sovereign, and to pour their treasure of waters into its bosom.

In this age of investigation and comparative freedom from prejudice, vulgar errors are rapidly giving way to truth. For a long time it was considered that the THAMES was formed by the junction of two rivers, called *Thame* and *Isis*, which mingled their waters at *Dorchester*, about fifteen miles below OXFORD. But, in reality, the river that runs through Oxford, and has obtained the poetical name of *Isis*, is the real THAMES, by which name it was known in the time of *CAMDEN*,* and the *Thame* is merely a tributary stream, which, like many others, serves to increase the magnitude and importance of the *King of British Rivers*.

Although the THAMES does not regularly overflow its banks at stated periods, yet, even in the infancy of its course, where its stream is but a few feet wide in summer, it frequently expands its waters into a wide sheet in winter, covering the meadows for many miles, and appearing like an expansive lake, dotted with islands, and with trees growing from its bottom.

At the distance of one hundred and thirty-eight miles from LONDON, the THAMES becomes navigable for vessels of ninety tons burthen, and having lately been connected with the *Severn*, the *Trent*, the *Mersey*, and other rivers, by means of canals, the inland navigation of the kingdom resembles the arteries and veins of the human body, circulating the conveniences and luxuries of life from the great centre of trade, LONDON, as they circulate the blood from its great reservoir, the heart.

But, while it displays beauty, and dispenses fertility, from its rise until it reaches the great metropolis, in these respects it differs but little from the other great rivers of ENGLAND. It is when arrived at this mart of the world, that it begins to assume the grandeur and majesty which entitle it to the distinction it possesses, that of sovereign of British rivers. Innumerable vessels, from the trim-built wherry to ships of considerable size, are continually passing up and down its stream; magnificent bridges, some of them

* It has always been called the *Thames* by the common people from its very source; and in an ancient charter granted to *Abbot Aldehelm*, certain lands bordering on the eastern bank of the river are particularly mentioned, "cuius vocabulum *Tensis* fuisse videntur qui appellatur *Summerford*"; and as *SUMMERFORD* is in Wiltshire, it is evident that the river was then called *TENSIS*, or *THAMS*, far above its junction with the *Thame*. The same thing appears in every charter and authentic history where this river is mentioned, particularly in several charters granted to the *Abbey of Malmesbury*, and some old deeds relating to *Orientalis*, both of them situated in Wiltshire. The Saxons called it *Thames* from its source to its mouth, and from *Tensem*, our *TAMS*, or *THAMZ* is immediately derived.

justly denominated wonders of the world, stretch from shore to shore, and its banks are lined with warehouses, filled with valuable commodities from every quarter of the globe. Below the bridges, the scene becomes still more interesting. Ships of every nation with whom we are in amity, lie crowded together in regular confusion, further than the eye can reach leaving merely a narrow

channel for the passage of such craft as are necessary for the purpose of unloading or shipping their valuable cargoes. Further down the river, the picturesque beauty of the scene is yet increased : the delighted wanderer on its shores has rural scenery, magnificent edifices, and large ships in full sail, at once within his view. The superb and stately HOSPITAL of Greenwich, the noble DOCKYARDS



SOURCE OF THE THAMES.

of Woolwich and Chatham, where our floating castles are constructed, and furnished with necessary rigging and stores, impart to the traveller, who passes down its gently-gliding stream, sensations which mock description, and give him exalted ideas of the power and grandeur of his native country.

No river in Europe is influenced by the tide to so great a distance as the Thames, as it flows even so far up as Kingston, not less, if we include its windings, than seventy miles from its mouth.

A most stupendous work has been undertaken in this enterprising age, that of forming a tunnel, or passage, for men, horses, and carriages, under the bed of this river; thus answering all the purposes of a bridge, without obstructing the navigation. Many unexpected obstacles occurred in the prosecution of this vast undertaking; but they were overcome, and there appeared a fair prospect

of its successful completion, when the funds of the company became exhausted, and the work has, consequently, been suspended; whether it will ever be resumed or not, time alone can determine.

It is less pain to learn in youth than to be ignorant in age.
—Solon.

If you pursue good with labour, the labour passes away and the good remains; but if you pursue pleasure with evil, the pleasure passes away and the evil remains.—Cicero.

THE GUIDE TO KNOWLEDGE.

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PRICE
ONE PENNY.

LORD MAYOR'S DAY.

NOVEMBER 9, 1832.



BEFORE we enter upon the descriptive and historical parts of this subject, we must take the liberty to offer an apology for presenting it to our readers in the pages of the "*Guide to Knowledge*." If we had to view it in the light of a mere civic pageant,—nothing above a *Lord Mayor's Show*, a splendid procession just to dazzle the eyes of the vulgar, and excite the idle curiosity of a gazing multitude, we might as well be remarking on the merits and attractions of a *puppet-show*; but we have a higher and more useful object before us than the puerile gratification of reciting the particulars of an empty exhibition. To youth, in particular, this anniversary display holds up an insinuating moral, to which their attention cannot be drawn with allurements too strong, or too frequent. The gay and the thoughtless will admire the liveries adorned with gold and silver, the embellished carriages, the state-coach, the emblematical banners, the gilded barges, the music that proclaims the joyful occasion, and the dashing oars that seem to imprint full many a dimpling smile on the venerable face of the far-famed *Thames*: this is all superficial delight; it dies with the day, and may end in disgust: but let us go to the moral; *this is the KERNEL, the other is the SHELL*. Who is he that sits in that magnificent coach? and why is he thus distinguished? He

is the new "*LORD MAYOR OF LONDON*"; and is exalted from among his fellow citizens by his early industry, his rectitude and virtue in youth, his activity, honour and economy in business, and his undeviating integrity and punctuality in all his transactions of trade and merchandise.* Does this honour make any youth covet a similar glory and eminence; let that desire excite emulation; the very scene before him silently admonishes and directs him—seeming to say, "*Go thou and do likewise*."

The custom of choosing a *Lord Mayor*, has for many years been held on Michaelmas-day; and the right of election is with the free-men of the several *companies*, or *guilds*, of the *City of London*. He is commonly taken in rotation from the list of *aldermen* of the different wards; but there are many instances of departures from this rule, according to the popularity, superior claims, and, perhaps, some-

* If we were to enter into the biography of all the characters who have filled the *Civic Chair*, we should find those qualities more frequently the causes of elevation than any other what-ever; the state of society, and ambiguity of some statute laws, at this present period seem, notwithstanding those laudable virtues, to require something more of talent and penetration than they alone bestow, for the judicious discharge of magisterial duties.

times political prejudice; certainly the very worst criterion by which to select any magistrate, much more one who is to preside over the government and welfare of the wealthiest and most noted city of the world, such as is the metropolis of Great Britain. On the morning of St. Michaelmas-day, the city officers, bachelors, &c., assemble at Guildhall, when the *cryer* announces to such of the livery as are present, the purpose for which they are called together, and calls upon them to come forward, and exercise their corporate franchises; the Recorder then addresses them, and explains fully the nature of business they are upon; after this preliminary ceremony, any citizen may propose what alderman he think proper to fill the office of Lord Mayor for the ensuing year; such alderman however, as he is not eligible to the high station of *prentor* in authority: * if the nomination be seconded, a show of hands is demanded: should others also be put in nomination, and two of the candidates being returned by the livery, one of them is chosen by his brother aldermen. But any of the candidates, or their friends, may demand a poll, on their being in the minority on the show of hands; in which case the choice of the Court of Aldermen is deferred until the election is decided † The ancient custom of presenting the new Lord Mayor to the Barons of the Exchequer, and the antiquated ceremonies there to be performed, seem to have arisen out of the occurrences of those *olden tyme*, when few persons could write, or even reckon any thing by calculation, and the caution was necessary to prevent ignorant and illiterate men from assuming offices beyond their capacities. The custom is followed now with the more appropriate practice of the Recorder addressing the barons, recounting the praises and excellencies of the late Lord Mayor, and representing the choice of his successor, as a selection due to his wisdom, worth, and distinguished virtues: the Cusitor Baron having had proof, and being satisfied with the representations made to him, confirms the eulogium, and with his legal brethren, receives the invitation of the *Lord Mayor* to dinner, at the Mansion House, in the city; an invitation that is seldom declined, a city banquet being no small invitation even to a judge.

Previous to the reign of King Richard I., A. D. 1189, Loxton was governed by a bailiff, the title being at that time changed to mayor; soon after the example was followed by many other boroughs, and cities in the kingdom. The appellation of *Lord Mayor* was conferred on Sir W. Watworin, by Richard II., on account of his loyalty and resolution, with respect to the menacing conduct of Wat Tyler, towards the king, who had invited this leader and spokesman of his revolted subjects to a conference, in Smithfield. Tyler showed such marked disrespect, and even threats, towards his sovereign, that Watworin felled him by a blow with the mace which he bore as the insignia of his office. This commotion originated from the insolent and brutal manner of one of the collectors on demanding an odious impost at Wat Tyler's house, in Essex.

The word *mayor* is derived, according to the etymology of *Lexicon*, from the ancient British word *mære*, that is, *mey or can*, as we have it in the potential mood of the verb in our language; it signifies, therefore, a conferred authority, allowed and admitted only, but not altogether imperative or absolute, a sort of permitted jurisdiction by sufferance.

This appears to be well ordered, for as the duty of sheriff places him on the subjection of an attendant on the judges, at the tribunals of criminal peers, audience, and in other ways; it brings him into observation on the administration of law and justice. He becomes better fitted to discharge the important duties.

† A question has been last propounded, whether any gentleman being a liveryman, and having served as bailiff, not being an alderman, may be elected for *Lord Mayor*; the custom being, otherwise; but, perhaps, not regulated by any right, except uninterrupted practice.

As to the pageant itself, great alterations have taken place at various periods, and those alterations are worth recording, to show, by the taste of the times, what progress KNOWLEDGE has made in the world, and particularly in the metropolis of the British empire. While the natives, our forefathers, continued to be tinctured with a Gothic propensity for rude and tumultuous pageants, and wild extravagances, all the symptoms of a manly barbarism were manifested in those ostentatious exhibitions, and they tended very much to impress the vulgar with admiration of the power and superiority of those who could make such splendid appearances; they looked upon them as something superhuman, and from that kind of awe and slavish fear they submitted to every sort of oppression and tyranny; but, in time, the people becoming enlightened, these imposing spectacles lost their attractions and their terrors, and instead of inspiring fear, they were in danger of falling into contempt and ridicule; hence, it became requisite to conduct them on a more rational plan, and in a more modest and unassuming manner than their former pomposity indicated.

The *Lord Mayor's Show* is the only public pageant kept up in the City of London. The procession proceeds from GUILDHALL, down King-street, across Cheapside, down Queen-street, and to Queenhithe, where, taking water, they proceed to Westminster, and returning, land at Blackfriars Bridge (formerly at Paul's Wharf). The poor men of the Lord Mayor's company, so many as the Lord Mayor is years of age, generally precede the state coach; they are commonly, by mistake, called the *Old Bachelors*. Men in armour ride on horseback, and a whole cavalcade accompanies the state-coach, exclusive of the city marshalmen, constables, &c. The erection of booths in Cheapside has been some years abolished, and the conducting of the whole ceremony is reduced to a more rational system than it evined, when successive Lord Mayors seemed endeavouring to outvie their predecessors in ostentatious grandeur. Of the present order and arrangement of the procession many will have ocular demonstration, and they who have not that opportunity may be informed by the journals following day better than we can attempt to particularize. Formerly, the *Mayor* rode on horseback, but Sir Gilbert Heathcote, in the reign of Queen Anne, was the last who exhibited as an equestrian; from his mayoralty to the present period the coach has been used.

The following account, extracted from an ancient writer, will afford a singular contrast to the present management of a London mayoralty installation, and may be entertaining to some of our readers. It is extracted from Smythe's Description of the *Royal City of London*, A. D. 1575, now two hundred and fifty-seven years ago. As a specimen of style and orthography, as well as the description it gives, it is rather curious.

"The *Lord Mayor* goeth by water to Westmynster in most summylyke maner, his barge (wherein also all the aldermen be) barge garnished wyth the armes of the citie, and vire the sayd barge goeth a shyppe of the queene's majestic, being tymed upp, and rigged lyke a shyppe of ware, wth dyvers peers of ordeneunce, standards, penons and targetts of the proper armes of the sayd mayor, the armes of the citie, of hys company, and of the merchants adventureis, or of the staple, or of the company of the newe trades (if he bee any of the sayd trades; or of compaines of merchants), next before hym goeth the barge of the livery of his owne company decked wthy their owne proper armes; then the bachelors barge, and so all the compaines in London, in order, every one having their owne proper barge garnished wthy their armes of their company, and so passinge alonge the *Thamise*, and thither at Westmynster, where he taketh his oath in Thexchequer, before the judge there (whiche is one of the chief judges of Eng-

land), which he returneth by water as aforesayd, and land-
eth at Powles wharfe, where he and the rest of the aldermen take
their horses, and in great pompe passe through the great streets of
the citie, of Cheapsyde, as follows: Fyrst, it is to be understanded,
that the lyveries of every compayne standynge alonge the streeete
redy as he passeth by. And to make wayes in the streeetes, there
are certayne men apparaellid lyke devills and wylde men, with
skybbis and certayne bendells. And fyrist of all cometh ij greate
standarts, one havyng the armes of the citie, and the other the
armes of the mayore's company, next them ij drummes and a flute,
then an ensigne of the citie, and then about lvi or lxxx poore men
marching ij and ij togeather, in blewe gownes with redde sleeves
and caps, every one bearing a pyke and a target, whereon is
payntyd the armes of all them that have byn mayor of the same
company that this newe mayor is of. Then 2 banners, one of the
lyng'e armes, the other of the mayore's owne proper armes, then
a set of hanboits playinge, and after them certayne wylfliers in
velvet cotes and chaynes of golde, with white staves in their handes,
then the pageant of trymphe rychly decked, wherupon by cer-
taine figures and wrytynges (partly tovchynge the name of the
sayde mayor), some matter tovchynge justice and the office of a
magistrate is represented, then xvij trompetters, vij in a company
havyng banners of the mayor's company. Then certayne wylfliers
in velvet cotes and chaynes, with whyte staves as aforesayde; then
the bachelors ij and ij togeather in large gownes, with crysmon
hoodes on their shoulders of sattyn, whiche bachelors are chosen every
year of the same company that the mayor is of, and not of the liverie
and serve as gentlemen on that and other festival dutes to wayte on the
mayor, beng in number accordyng to the quantitie of the com-
pany, sometimes 60, 80, or 100. After them xij trompetters more
with banners of the mayor's company, then the dromme and flute
of the citie, and an ensigne of the mayor's company, and after the
wayte of the citie in blewe gownes and redd sleeves and caps, every
one havyng his sylver collar about his neck, then they of the lyverie in
their large gownes, evry one havyng on his head his left shoulder,
halfe black and halfe redd, the nomber of them is accoordinge to the
greatnes of the compayne whercolf they are, after them fallowe
sheriffes' offycers, and then the mayors offycers, with other offycer
of the citie, as the common sergeant and the chamberlayne; next
before the mayor goeth the swordbearer, havyng on his head the
capp of honour, and the sworde of the citie in his righte hande, in
a riche seabarde, set with pearl, and on hys left hand goeth the
common crier of the citie, with hys greate mace on hys shoulder,
all gilt. The mayor hath on a longe gowne of skarlat, and on hys
left shoulder a hoope of black velvet, and a collar of golde of SS
about hys neck, and with hym rydeth the olde mayor also, in his
skarlat gowne, hoope of velvet, and chayne of golde about his neck;
then all the aldermen, ij and ij togeather, (amongst whome is the
recoorder) all in skarlat gownes, and those that have byn mayors
have chaynes of golde, the other have black tippatis, the ij sherifffes
come last of all, in their skarlat gownes and chaynes of golde.

"In this order they pass alonge, thorongh the citie, to the Guyld-
hill, where they dyne that daie, to the nomber of 1000 persons, all
at the choyce of the mayor and ij sherifffes: this feast costeth 400
pounds, whereof the mayor payeth £200, and eche of the sherifffes
£100. Immediately after dynner they goo to the churche of St.
Paul, evry one of the aforesayde poor men bearynge stafes, toarches,
and tangettes; whiche toarches are lyghted when it is late, before
they come from evenyng prayer."

Our readers of the witty class will no doubt feel inclined to joke
upon the circumstance of the *citizens* going to dine before going to
prayers; and those of a moderate disposition will condemn them,
as entire gluttons, more anxious to please the appetite than to
praise the Deity. Abstinence (we are informed), on public occasions, or festival days, is not a general practice with the worthy
and worshipful members of our national emporium, but to enjoy
the real pleasure of eating and drinking. A man should never
exceed the *quantum sufficit*, more than that spoils the feast. That
which constitutes a true feast has been well-described in *Blackwood's Magazine*, about seven years since, which we transcribe:

Not launch of venison, of flavour true,
Fat, juicy, nicely dress'd,
Nor turtle, culpeper of verdant hue,
Nor soup, in whose rich flood
French cooks a thousand relishes infuse,
Nor fricacees well stew'd ;
Nor Franco's greater boast, high fumed ragouts :
Not sirloin of beef
Crowning a dish, in which rich gravy lies,
Not turbot, ocean chief,
Which ruddy lobster sauce accompanis,
No—a good appetite
And good digestion, turn into a feast
Whate'er front tooth can bite,
And grinders manducate, and palate taste ;
Bo it homely bread and chearse,
Or bacon smoked—
Be it onions fiery root,
Whose rank effluvia drawns unbidden tears,
Potato, Erin's fruit,
With which the Irishman his stomach cheers ;
Or oatmeal porridge, chief—
Undoubted chief, of Scotland a rustic slops,
Yet in these meals so plain,
Let but a sharp appetite as guest attend,
And napkmed aldermen
May grudge the goat with which the bits descend.
This constitutes a feast,
To experienced hunger, and havo wherewithall
(Though it be not of the best)
To stop the void bordbasket's healthy call.

Though we are great opposers of Epicurean indulgences, we are
not quite inexorable to entreaty when called upon, nor unfeeling
towards those who suffer even from their own impiudence; we,
therefore, give gratuitously the following *recipe*, which, after a
plethora, may be administered the next morning with advantage, to
allay the headache, not of a *patient*, but more likely an *impatient*
sufferer. We confess it is not attainable by any except a rich man;
but, as poor people are seldom in danger of the disease, we do
not think that to them it is of much consequence; to the aldermen
and the livery (we expect) our prescription will be more welcome
than Dr. ABENELLY ever found himself at the bedside of a *bon-vivant*; and we partly anticipate a vote of thanks, *pro rato*, from the
next court, if indeed, a special *be ot* be fit for the purpose:

Ring for your valet, bid him quickly bring
Some hock and soda-water, then you'll know
A pleasure worthy Xerxes, the great king,
For not the best sherbert stellid with snow,
Nor the first sparkle of the desert spring,
Nor Burgundy in all its sunset glow,
Then, via with draughts of hock and soda-water.*

Hearthly we wish PROSPERITY TO THE CITY OF LONDON, may her *institutions* be inviolable, her magistrates incor-
ruptible, her benevolent establishmants perpetual, her temples
sanctified by pure RELIGION, and her inhabitants examples of
piety, integrity, and wisdom, to the rest of the WORLD!

* A breffe description of the royll city of London, &c., quoted in Egerton Bridges' Bibliographer, vol. i., page 310.

* This recipe was furnished originally (as it is said), by one who
will not be named. In such matters, we therefore give it not on our
own authority.

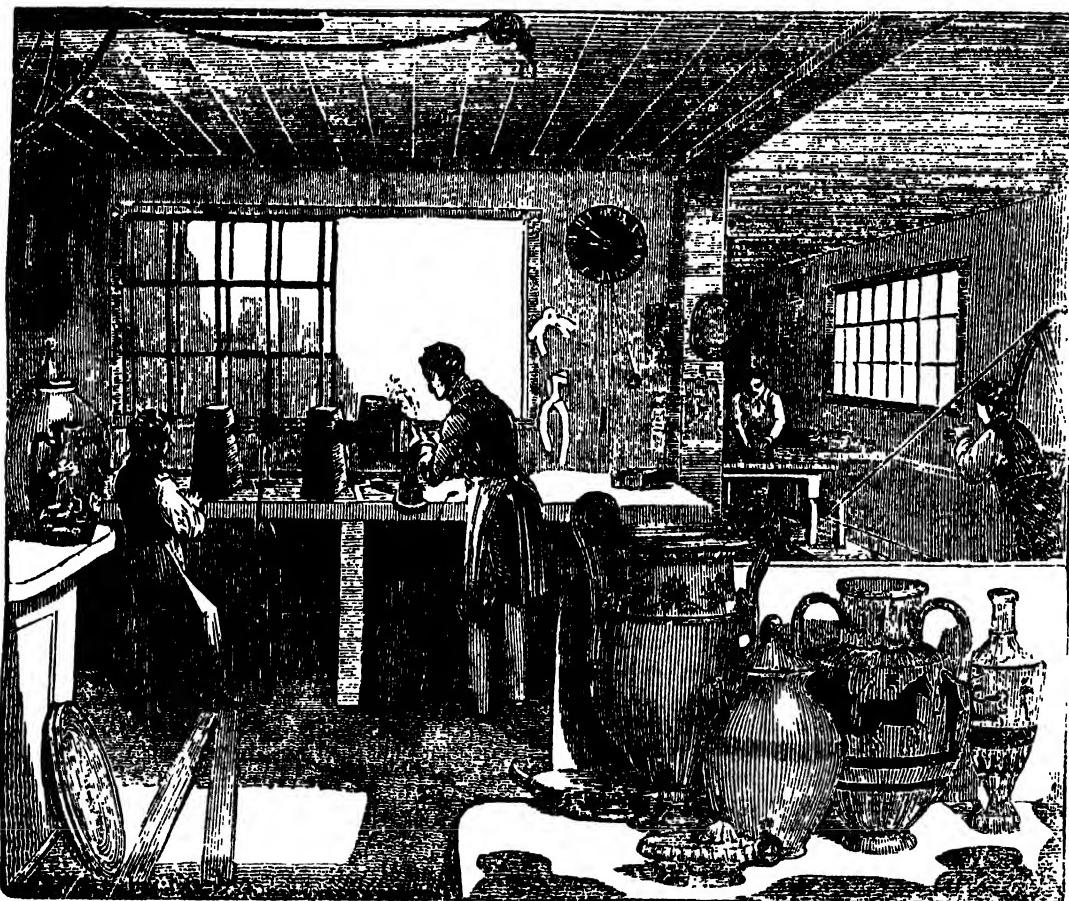
BRITISH MANUFACTURES.—V.

POTTERY-WARE.

The manufacture of pottery-ware possesses claims to our attention, both on account of its antiquity and general utility; and it is a very curious circumstance, that the manipulations in this art are nearly the same in the present day, as they were more than thirty centuries back. The prophet Jeremiah, in describing the potter's tools in his time, says, "Then I went down to the potter's house, and, behold, he wrought a work upon the wheels." Now, this is just the scene which the curious inquirer would witness in

the present day, if he visited the workshop of the potter; and in the above graphic delineation, the reader may see a practical exemplification of the remark.

Pottery-ware consists of clay and flint earth intimately blended together, moulded into the required form, and then baked. Now, the first of these processes will require no comment, as it is of a purely mechanical character. Form is communicated to the earthenware either by pressure, or by the wheel. The latter operation is exceedingly curious. The upright shaft and turning wheel is shown on one side of the engraving, and the simple lathe at the other. To give form to a vessel, the potter places a ball of moistened clay



on the upper part of the shaft, and applying his hand to the flexible mass, while the wheel revolves with considerable velocity, it instantly acquires a symmetrical form, as it must be obvious that the mere communication of perfect rotundity involves the first element of beauty.

After the vessel is thus rudely formed, it is allowed to dry for a short time, and then removed to the turning-lathe, delineated on the other side of our engraving. Here, by a nearly similar process, it is turned and perfected for the oven.

The potter's oven, which we must now notice, is very much like that in which bricks and tiles are usually burnt. It is of a cylindrical form, surmounted by a dome, and furnished with fire-places or mouths, from which the fire passes by horizontal flues in the bottom, and perpendicular flues, called bags, on the inside, and so ascends through all the interstices of the dome, until the surplus escapes through the aperture in the top.

Most ovens are surrounded by a high conical building, called a hovel, large enough to allow the man to wheel coals to the requisite places, and to pass along to supply each mouth with fuel; and at the same time to protect both him and the oven from rain.

The most intense heat is continued for several hours, and on removing it from the oven, it acquires the appearance of biscuit, by which name it is usually known. If pottery remained in this state, it would, in some cases, be permeable to water; hence wine-coolers are always in the biscuit form. The best size of wine-coolers is that which just admits the bottle, for then the air of the room can very little affect the water in the cooler, which consequently, by passing from the inner to the outer surface, effects the purpose sooner; a humid coating being thus presented to the action of the surrounding atmosphere, and the evaporation causes a quicker diminution of heat than could take place with a dry surface.

All articles of pottery which have a variety of colours, are ornamented either by the pencil, or by impressions taken from copper-plates. The former is called blue, or biscuit-painting; the latter blue printing. Both processes take place on the biscuit, prior to the ware being glazed. If the ware were not previously fired and were capable of being freely handled for the painting, the water used to soften the colours, would also affect the clay; and the impressions from the plates could not be clearly, if at all transferred to the ware. In blue-painting, the colour is mixed with water and gum, and carefully laid on the biscuit-ware. As every stroke leaves a mark in the pores of the vessel, great attention is paid to the pattern, for a stroke once made can never be rubbed out. After the pattern is finished, the ware is allowed to dry by the atmosphere, and is then dipped in the glaze; it is afterwards exposed to heat in the glass-oven which fuses the minerals contained in the colours, and gives to each a coating of real glass: about 4000 young women are employed in this branch of pottery, and by their industry support themselves in a respectable manner. Blue-printing consists in taking impressions from engraved copper-plates, by means of a rolling-press. The blue-printer lays the plate upon a stove while the oily colouring substance is rubbed in, and by the heat the metallic particles contained in the oil flow and sink more readily into the engraved lines. The colour is oxide of cobalt, fluxed with different substances, and in suitable proportions, for the pale or dark blues.

The superfluous colour is carefully cleaned off the hot plate, which is laid on the press, and covered with a piece of coarse tissue paper, which has been first brushed over with a strong lye of soft soap. The whole is now passed through the press, and the heat of the plate dries the paper, and enables it the more readily to take up the colour.

The impression thus taken is received by a girl, called the "cutter," who cuts it into the required form, and hands the parts to the "transferrer," who puts them on the biscuit, and when she has properly arranged them rubs the surface till the several pieces are completely attached to the clay. The article is then left for a short time to imbibe the colouring matter; after which, the paper is well washed off with clean water, and the process completed. Sometimes the outline of a pattern is printed on the ware, and the colours are afterwards added with a pencil. The earthenware is now ready to receive the smooth coating called "glaze." This consists of real glass, or a compound of flint-earth, and it renders the vessel completely impervious to moisture. There are cases in which colour is imparted at the same time as the vessel acquires its polish, by a mere blending of certain tints with the glazing material.

The finest collection of antique pottery in the country is found in our great national depository, the British Museum, and of these the artist has furnished some beautiful specimens in the wood-cut. We need hardly add, that the works at Colebrooke Dale have, within the last few years, produced specimens equal, if not superior, to the proudest works of the ancient masters.

ON CHIVALRY.

Few persons are there who entertain quite correct notions as to the word which heads this chapter. The most gifted of our modern bards, who was singularly well and extensively read, evidently shared the common error upon this subject; for, in one of his numerous poems, he says,

"Cervantes smiled Spain's CHIVALRY away;"*

Byron: Childe Harold.

Whereas Cervantes in very truth did nothing of the kind. The marvellous and impossible feats ascribed by the old romance writers to their heroes, have no more resemblance to real Chivalry than the extravagant grimaces of a buffoon have to politeness!

Chivalry was so far from consisting in, or giving countenance to, the extravagant knight-errantry described in the old romances, and admirably burlesqued by Cervantes in his inimitable Don Quixote, that, whereas such mad freaks as are attributed to the knights errant of romance would, if they could by any possibility be enacted, have folly for their foundation, and uproar and violence for their result; real chivalry, on the other hand, was based upon political wisdom, really astonishing for the early period at which it was displayed, and tended at once to the general welfare and advancement of society, and to the comfort and safety of individuals who, but for it, would have been the sport and the victims of all who united the will with the power to oppress them.

When we reflect upon the nature and tendency of the feudal system, a system which made every man of considerable property a chieftain, and every one of his serfs and dependents a soldier; which armed every hand, converted every considerable house into a fortress and a castle, and rendered the more powerful feudal chiefs actually powerful enough to set even their sovereign at defiance, we at once perceive that Chivalry was the only institution by which the weak could be secured against oppression and insult, and the powerful restrained from tyranny and insult. The independence of the feudal barons rendered wars and feuds a matter of every-day occurrence; and it frequently happened, that the vengeance of the party which was, or pretended to have been, injured, was inflicted not merely upon those who had inflicted the injury, but extended itself also to all who were connected with them, by blood or otherwise. It is abundantly easy to perceive, that in a state of society such as this, females, minors, and dependents of both sexes, and of all ages, were perpetually liable to be injured, on account of a remote connexion with those who had originally provoked a quarrel, or who, bound by their feudal tenure, had subsequently taken part in the contests arising from that quarrel. Moreover there were many barons, and still more numerous persons of inferior rank, who actually lived by the commission of rapine and injustice; and who, notwithstanding the notoriety of their crime, were, either by their own military power, or by their connexion with some one or more of the more powerful barons, actually beyond the reach of ordinary justice. Living by the exertion of injustice and force, they could only be kept within any thing like tolerable bounds, by the counteraction of a more equitable and a more powerful force; and that the then imperfectly framed and ill administered laws of most European countries were totally inadequate to supply.

Now, originally, the institution of Chivalry had for its direct and almost sole object the remedy for this very imperfection of the law; and high spirited youth attached themselves to particular barons, not merely to serve them as individuals, but, also, for it was in France, that Chivalry properly so called had its birth, to aid generally in restoring and preserving to their country that tranquillity. And that individual security of person and property, which had been completely overturned in the wild tumults and outrages which accompanied, and followed the extinction of the second lynasty of that country.

Glad to procure the adherence and co-operation of young and independent persons, the kings and barons, at first of France and subsequently of all Europe, readily conferred upon such the honour of knighthood. He who had received this honour himself was competent to confer it upon others, and as access to monarchs got more and more difficult, those who were desirous to become

knights, attached themselves to some gentleman of birth, character, and prowess, who was himself a knight, and from whom they literally "won their spurs" by enacting beneath his eye such deeds as were the best recommendation to that honour, and most in accordance with it. Hence, when the suppression of political tumults, which, as we have already shown, was the first object of this institution, became no longer necessary, the individual who held the honourable rank of knighthood, was bound by his vow and by the conventional laws of his order, to extend his protection to all who needed it, *more especially to females*; and to hurl defiance at all who outraged female modesty, tarnished female reputation, withheld the rights of youth, or invaded the property or injured the persons of the aged, the ignorant, or the defenceless. To deprecate an institution having objects such as these, is to libel some of the best feelings of our nature. It is, in fact, impossible to deprecate such an institution, if we take the trouble to make ourselves acquainted with its nature before we venture to pronounce judgment upon its tendency and character. The mad errantry which mistakes a windmill for a giant, and the *dramatis persona* of a small puppet-show for enchanters and demons, is exceedingly ridiculous, no doubt; but, because Cervantes was a witty satirist, must we draw false conclusions from incorrect, and therefore inadmissible premises? The knight of real life, was an accomplished, a polite, a gallant, and, which was of still more importance, a humane and virtuous man. He did not mistake irony for castles, as the mad knight of Lu Manela is represented to do; for he resided the greater portion of his time in castles, and was the welcome and esteemed guest of those who had castles, and who were worthy of having them and of entertaining him. To him the oppressed never cried in vain; and by him the voice of beauty in distress, or of injured innocence in illegal or unjust durance, never vainly appealed. Brave in fight, he, notwithstanding, fought only when justice would sanction his so doing; and in his house of peace, his courtesy was all conspicuous as his valour amid the alarms and the perils of war.

At a time when the police of every European country was exceedingly defective, the usefulness of Chivalry was almost incalculable. It softened the manners of men-at-arms, it protected the female world, repressed the pride and the cruelty of those barons, and their retainers, who lived by substituting might for right; and it ensured to villainy the punishment it deserved, and to helplessness and innocence the protection they required. Let us, then, be very careful not to impute to a real institution, and that a most valuable and honourable one, the follies which had no other existence than in the ingenuous brains of romance-writers.

WINTER.

If we do but take the pains to observe what passes around us, every thing and every circumstance of our world manifest the wisdom of the Divine economy. The whole scheme of the earth, and every circumstance of its preservation, are indicative of the wisdom and goodness of the Creator. To man, and all other animals, sleep, like a soothing and nursing mother, periodically returns to repair the havoc made in the spirits and animal strength by labour or exertion. Without sleep the strength of animated beings would soon be exhausted; and they would sink beneath their exhaustion. But the havoc made by the exertion of the day is regularly and fully repaired by the repose and forgetfulness of the night. We feel even the most senseless or unreflecting among us, the value of sleep, and the impossibility of our existing for any considerable period without it. But few, perhaps, have reflected that natural

also, requires repose. Winter is nature's night; giving her repose from her labour, and recruiting her energies to fit her for new exertions. What the night does for animated nature, the winter does for the earth. Without sleep, the most robust man would soon fall a victim to harassed spirits and bodily fatigue. Nature, luxuriant and actively teeming nature, requires repose also. Though the seed be sown, indeed, within her bosom, and though the young plants have already begun to shoot out their fibres, nature labours not during the winter as during the other seasons. In every thing how wise, how beneficent, how powerful, and how thoughtful is our God! For all his creatures he has thought for all their weakness he has strength; for all their wants he has abundant and never-failing resources.

CALUMNY.

CALUMNY is a vice which every one detests: chiefly, perhaps, because no one knows how soon he may be its object and its victim. But, very frequently it happens, that those who are the loudest in their condemnation of this vice are themselves in the constant practice of it. They report facts in a spirit of exaggeration, or without a due attention to exactitude; and thus they frequently do, not from a desire to calumniate, but simply from a habit of adoring or exaggerating their recitals. And, therefore, as far as regards *unintentional* calumny, one great means of preserving ourselves innocent of it, is a rigid abstinence from joining in mere gossip. This abstinence will at once prevent us from ignorantly earning ourselves, and from aiding in the more mischievous, though probably not more injurious, falsifications of wilful calumniators. It is at once the duty, and the interest of every honest man in society to disown calumniators, and to oppose calumny. And considering how easily this most desirable object might be effected, it is really as much to be wondered at as it is to be regretted, that it is not done. The calumniator, like the thief, *dreads the light*. As cowardly as he is cruel, he wishes not merely to ruin his victim, but also to do so without giving him any opportunity for retaliation or defence. Accordingly he always demands *secrecy*. Inviolable secrecy is the demand he makes of all into whose ears he wishes to pour the subtle and deadly poison of calumnious falsehood. Alas! he not only demands this fatal secrecy, this, at once unwise and cruel confidence and contumacy, but, also, in instances but too numerous, obtains it also. And, here it is that the good are blamed, here it is that they render themselves the unconscious accomplices of the most wicked and the most worthless. It is the duty of every good man never to listen to a tale by which the character of another human being is prejudiced, without distinctly intimating his intention to bring the accused and the accuser face to face. Were this invariably done, the foul career of calumniators would soon be terminated, and many an honest man would be saved from ruin, and many an honest man's connections from misery and mourning.

We lose more friends by our requests than by our refusals.
O how closely knit are two hearts when there is no vice between.
To a man full of questions make no answer.—*Plato*.
Friendship is stronger than kindred.

A good surgeon must have an eagle's eye, a lion's heart, and a lady's hand.

We must not contradict, but instruct him that contradicts us; for a madman is not cured by another running mad also.—*Antithesis*.

WONDERS OF NATURE.

THE HARE-INDIAN DOG, AND THE DINGO, OR
DOG OF NEW SOUTH WALES.

The dogs represented in the annexed engraving are from opposite hemispheres, and are probably the least known of the species to which they belong. That lying in the foreground is the Hare-Indian dog; so named by Dr. Richardson, from a tribe of Indians known by that appellation, living on the banks of the MacKenzie River, in the northern continent of America, about the sixty-seventh degree of north latitude. The larger dog, which appears standing behind the other, is the New South Wales dog, or, as it is called by the natives, the Dingo. As it is found about the fortieth degree of south latitude, there are one hundred and seven degrees of the meridian intercepted between the *habitats*, or places of abode, of the two animals. We shall first describe them separately, and then view them together, and in their general relation to the dog tribe.

The HARE-INDIAN DOG is one of the smallest of its kind that is found in the northern continent of America, and appears to bear the same relation, in point of form and size, to the great Esquimaux dog, that the English cocker does to the Newfoundland dog. Its belly, which is slender, is covered with long hair, white on the body and the inside of the legs, and sheeted, like the English setter, with large patches of dark fawn colour on the sides. The head is small, and the muzzle, which is pointed, is covered with short white hair, the general covering of the whole face, except occasionally a brownish patch over each eye. The hair on the legs is short, becoming thicker towards the toes. The feet are large, and the inner parts of the toes are covered with long hair; a peculiarity which enables these dogs to run upon the snow when larger animals partially sink, and advance with difficulty. The ears, which are rather thick, are pointed and erect, of a dark fawn colour on the outside, and white within. The tail, which is rather long and bushy, is curved like that of the English setter. The expression of the Hare-Indian dog is mild, and though its character accords with its appearance, it is not apt to learn, and displays little of that intelligence which is peculiar to the dogs of a people who have attained a high degree of civilization. It appears to be a fact, confirmed by the observation of all travellers, and by the experience of every age, that the intelligence of the dog is influenced by that of the people with whom he is found.

The HARE-INDIAN DOG is too weak to be used, like the Esquimaux, for burden or draught; and though it has neither strength nor courage sufficient to pull down the larger animals in the chase, the facility with which it can run upon the snow enables it to overtake the moose and reindeer, and to obstruct their progress and keep them at bay till the hunters come up. In their native country they are never observed to bark, and though kind, and to a certain degree familiar, yet a sort of suspicious look, by which most half-domesticated animals are characterized, sufficiently indicates that they are still far from that perfect subjection and dependence to which the principal varieties of the dog have been reduced in Europe. They are sometimes chased by the large dogs at the fur-stations, but their superior fleetness generally enables them to escape. Those large dogs appear to retain many of the peculiarities, as they certainly do a considerable likeness, of the great gray wolf of the same country. They pursue the Hare-Indian dogs, not through wantonness, but to devour them. The Hare-Indian dog was first particularly noticed by Captain Franklin and Dr. Richardson, in their overland expedition, with a view to ascertain

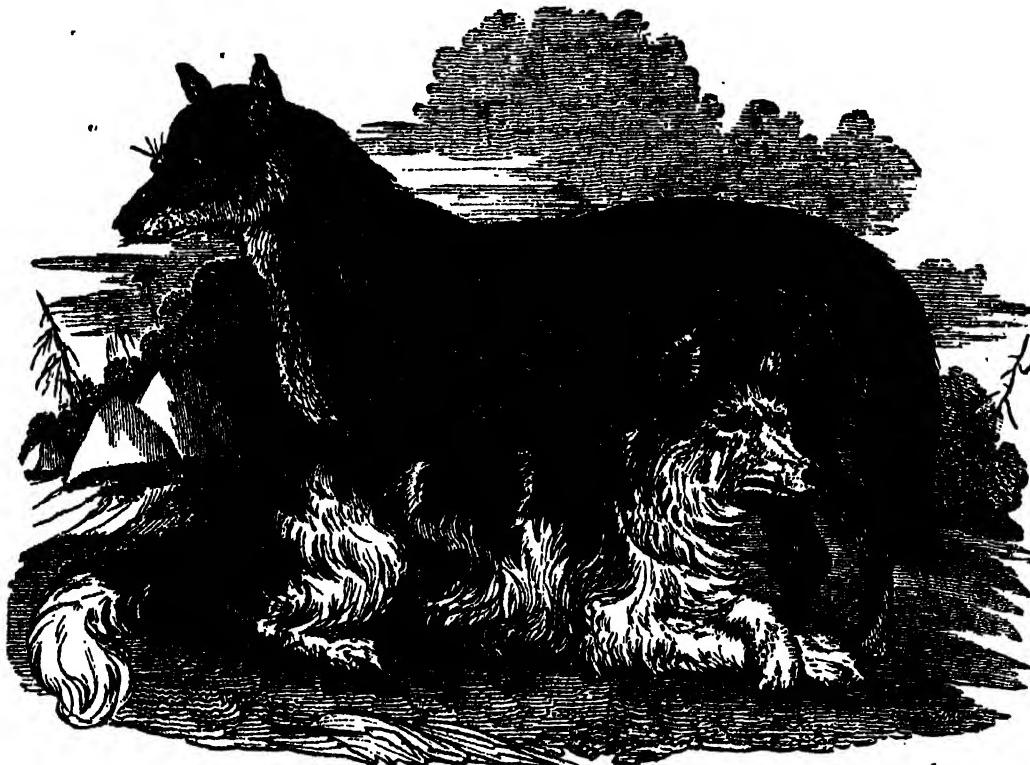
the possibility of a north west passage to the Pacific Ocean, and two of them were first brought to Europe by those enterprising travellers. A young one, that had accompanied Dr. Richardson for nine hundred miles, was killed and eaten by an Indian, who protested that he mistook it for a fox. From the accounts of the above travellers, this breed appears peculiar to the Hare-Indians, and to such tribes as frequent the Great Bear Lake, in 63° north latitude.

The DINGO, or NEW SOUTH WALES DOG, appears to have been first seen by some of Dampier's crew, in 1699; for he observes in his account of his voyage, that his men "saw two or three beasts like hungry wolves, lean like so many skeletons, being nothing but skin and bones." In his former voyage, in 1688, "the tread of a beast as big as a great mastiff dog," had been observed by him, though the animal itself was not seen. Some of these dogs were afterwards observed by Captain Cook, but without any particular notice, for he gives no account of their precise form and appearance; and it was not until the publication of Phillips's Voyage to Botany Bay, in 1789, that an engraving and a description of one was given to the public. An engraving of the New South Wales dog was also given by that admirable delineator of animals, Thomas Bewick, in his History of Quadrupeds, 1790; but in the second edition of that work, it is removed from its former place among the dogs and placed beside the wolf, with which it is supposed by the compiler to have greater affinity than with the domestic dog of Europe. White, in his Journal of a Voyage to New South Wales also considers it as the wolf of that country.

The DINGO is about two feet and a half long, from the nose to the tail, and in its general proportions, which are at once indicative of strength and agility, resembles the cur. The body is covered with two sorts of hair; the one rather long and smooth, and the other, which more immediately covers the skin, short and woolly. The upper part of the head, back, and tail, is of a yellowish dun, or pale brown, becoming lighter on the sides, the neck, and the breast. The belly, the inner part of the legs, and the muzzle, are of a dingy white. The muzzle is sharp, without being much elongated; and the general appearance of the head is not unlike that of a fox. The tail is bushy and slightly curved; the ears are short, pointed, and erect, and from being generally directed forwards, as if in the act of listening, give the animal a restless and excited appearance. Like all other wild dogs, they do not bark, and seldom exert their voice but when pressed by hunger or in pursuit of their prey, when in the first instance it resembles the howl of the wolf, and in the other is like the subdued cry of a hound. When teased or irritated they do not express their anger by a growl, but by setting up the hair of the back like bristles. In a wild state they live in troops of from two to three hundred, not admitting into their community dogs of a strange tribe, and they hunt the kangaroo in packs. Their swiftness and strength, which are greater than in the domestic dog of similar size and proportions, soon enable them to overtake and pull down this animal, which, however, makes a vigorous resistance with its hind legs and tail, and not unfrequently proves an overmatch for a single dog. The kangaroo is said to be able to inflict a blow with its thick muscular tail sufficient to break the leg of a man or the back of a dog. Some of them, it would appear, had been partially reclaimed by the natives, at the time of our first establishing a colony at Botany Bay, and were employed by them in the above species of chase; but under such masters, the poorest and least civilized of the human race, their original and untractable character received little improvement, nor do the attempts of Europeans to subdue their ferocity and increase their intelligence appear to have been at-

tended with greater success. They are sensible of caresses, and when corrected generally display a disposition to rebel. They cannot be brought to comprehend that distinction of property which is so striking a peculiarity in the dog tribe so long domesticated in Europe. They fly at the sheep and poultry of their owners, with the same eagerness with which they pursue wild animals in the woods, and the only service in which the settlers have employed them, has been in hunting kangaroos—the same purpose for which they were employed by their original masters. One that

was kept in the French Museum displayed that insensibility which arises from an animal's ignorance of the power of others, and showed as much eagerness to attack a panther or a bear, as to seize on a sheep or a turkey. They are not prolific, and, like the Esquimaux, have an aversion to the water, and are awkward swimmers. It may here be observed that the Pomerian dog, which Buffon considers as the shepherd's dog in its first stage of cultivation, and to which the Dingo bears a marked exterior resemblance, displays a similar aversion.



HARE-INDIAN DOG, AND THE DINGO, OR DOG OF NEW SOUTH WALES.

MORCEAUX.

FORMERLY, YEOMEN were, by their title, on a level with esquires, and they were called yeomen, because, in addition to the weapons proper for close engagement, they fought with arrows and a bow, which was made of the Yew.

After the Conquest, the name of yeoman, in reference to the original office in war, was changed to that of ARCHER. The term, however, was continued, with additions, as yeoman of the crown, yeoman of the CHAMBER, yeoman USHER, &c.; and we find that considerable grants were bestowed on some of them, as in the fifth century, "Richard Leden, yeoman of the crown, had, by a royal grant, the office of keeping the parke, called Middle Parke, in the county of Hertforde." About the same time, "John Forde, yeoman of the crowne, had the moytie of all rents of the town and hundred of Shaftesbury; and Nicholas Wortley, yeoman of the chambre, was made baillieffe of the lordship of Scaresdale and Chesterfelde, within the county of Derby."

Though at all times there were yeomen to attend the king's person, yet the company now called yeomen of the GUARD, is not of very ancient date, having been instituted in 1466, by Henry VII.

They were originally 250 in number, each not less than six feet in height, and in rank they were next to the gentry, but at present they consist of 100 constantly on duty, and 70 off duty. Their attendance is confined to the king's person, both at home and abroad; the one-half carry ARQUEBUSES, and the other PERCUISANS, and their dress is the same as it was during the reign of Henry VIII. In a legal view, a yeoman is defined to be one that has fee-land of the value of forty shillings a-year, and is thereby qualified to serve on juries, to vote for knights of the shire, and to do any other act, where the law requires one that is *probus et legis legitimo homo*.

The yeomen always took a leading part in whatever concerned the regulations or interests of the kingdom, and their renown as warriors is fully established by their numerous heroic achievements. In various battles the British yeomanry, or archers, sustained the brunt of the action, and thereby ensured the victories that were gained.

THE
GUIDE TO KNOWLEDGE.

EDITED BY MR. W. PINNOCK,

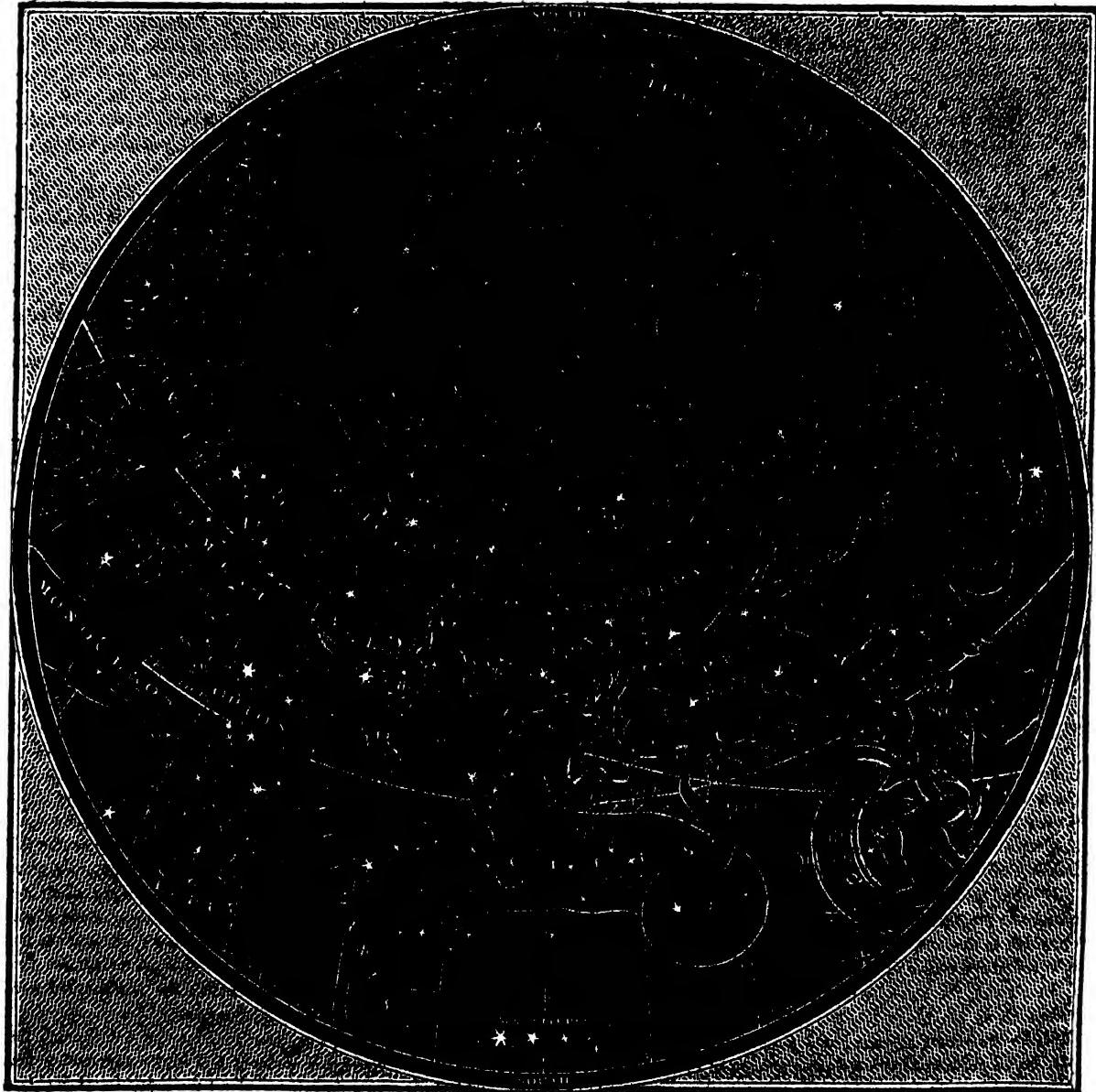
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No. XXV.]

SATURDAY, NOVEMBER 17, 1832.

PRICE
ONE PENNY.

A CONTEMPLATIVE VIEW OF THE HEAVENS



WHEN the shades of night have spread a veil over the azure plains, the firmament discovers to our view its magnificence. The sparkling gems with which it is sown, are so many SUNS, which the ALMIGHTY has suspended in the immense space thereof, to give light and heat to the worlds which roll around them. "The

HEAVENS declare the glory of God, and the firmament showeth his handy work."

If the view of the celestial system could draw forth such an ejaculation from the ROYAL PSALMIST at his time, what effect ought it to have now. The HEAVENS, as known to THALES and

HIPPARCHUS, were but little understood, compared with the discoveries of modern ASTRONOMERS, especially since the invention of telescopes.

Crude and uncertain as were the opinions and prognostications of the ancients from their observances of the celestial bodies, yet they had the sanction of many coincident circumstances to justify their conclusions, as to the effects of certain appearances and combinations of the heavenly aspects, connected with the changes that successively occurred in terrestrial affairs. The uniformity of events with appearances among the constellations influenced the learned to conclude, that such coincidences must arise from the effects of certain conjunctions and positions of the PLANETS, and of the starry firmament, then visible to their observation; and, therefore, they named the signs, or divisions of the STARS, according to those incidental circumstances.

How vague their calculations must have been will appear from the fact, that several new comets, planets, and thousands of fixed stars, have since been discovered, of whose influences they could have no idea, as they were not aware of the existence of such bodies.

The stars discernible in the signs of the zodiac, by the help of telescopes, are found to be so numerous, as to alter the figure and structure of the whole; and to show how chimerical any hypothesis on that subject must have been—a long time, and even to this day, curious notions were, and still are, entertained among the vulgar, relative to the influence of the Moon upon our Climate, its changes of weather, diseases of body and mind, and regulation of mundane affairs; and though many of these notions have been exploded, much of error and superstition yet remains on this subject.

Undoubtedly, in the structure and economy of the Universe every thing has its use; and each separate part is independent upon the whole, and acts its designed purpose, as a portion of the grand Machine, that is to effect the end intended by the Divine Creator; but no individual thing among all the works of an all gracious and benevolent MAKER—could ever consistently with a merciful Duty, be invested with malign influences, or calculated to produce effects injurious to the human species. When the Omnipotent Being had completed the Creation, he surveyed the whole, and “Behold, it was very good.”

The most sublime scene that the human eye can survey is most assuredly the “Canopy of Heaven,” in whose expanse millions of Suns from immeasurable distances shoot their twinkling splendours through the immensity of space, while the remnant of them proclaim that still beyond their spheres, “worlds on worlds,” and “systems on systems,” continue to multiply without approaching a single point nearer to the end, as in reality there is no end; nor indeed can there be an end.

What a field for CONTEMPLATION is the nuptre space! What a study for the ASTRONOMER! What a theme for the PHILOSOPHER! on which to descend, and through which to trace the paths of the orbs round the centre of the system.

In viewing the stars by night, at any particular hour, we see only such as are above the horizon; and, therefore, only observe half the firmament at once; and such as rise helically are not visible, on account of the superior splendour of the SUN, which obscures the sight by a resplendence that fills the optic organs with light.

The flight of the EARTH in its annual orbit makes a small difference in time, with respect to the rising and setting of the fixed stars, but not in any material degree so as to require a particular correction. Their positions may be ascertained on a celestial globe, with a sufficient accuracy for all hours of the day, and may be

pointed out in the sky, by noting their declination and right ascension, or by their azimuth and amplitude: for instance, the above plate represents a correct view of the HEAVENS on the 29th of this present month of November, at half-past nine in the evening.

The method of using this map is,—if looking to the NORTH,—stand with your back towards the south, and hold the map by the northern point, and you will have in view those stars that are termed below the pole:—If looking to the SOUTH,—turn your back towards the north, and hold the map by the southern point, or hold the map over-head in the direction north and south, and it will correspond with the HEAVENS on the above day at that particular time.

If the MAP be used for any following evening, the observation must be made about four minutes earlier than the preceding evening; thus, if on the 30th of November, instead of half-past nine, the observation must be made twenty-six minutes past nine; and on the first of December, twenty-two minutes past nine, and so on for successive evenings.

To gain a knowledge of the principal stars is by no means difficult. The great object is to get a starting-point. This the Creator has amply furnished in the constellation called Ursa Major. The seven principal stars of this constellation are so conspicuously arranged, that, if once viewed, it is almost impossible to mistake them for any others. The form of these seven stars is that of a butcher’s cleaver. The ancients compared this constellation to the form of a Bear, their sacrifice for the dead; which term was afterwards corrupted into Bear, and so it remains to this day.

If we take the star marked *a*, in this constellation, and proceed to the star marked *b*, in the same, and continue on in nearly a straight line, the next bright star will be the POLAR STAR, situated in the Tail of the Little Bear. This star is the point on which the HEAVENS appear to revolve, and apparently never shifts its situation. This constellation is called the Little Bear, from the seven principal stars taking the same form as those of the Great Bear, only in an inverted position.

If we descend from the tail of the Great Bear directly south, we shall arrive at a star called Con CAROLI, or Charles’s Heart. This constellation was formed out of a cluster of stars by CHARLES SCARBOROUGH, in honour of CHARLES I.

If we take the head of the Great Bear, a little southward, we shall perceive three bright stars forming an acute angle with the longest point southward; the star marked *a* is called CAPUTA, this, with the star marked *b*, form the shoulders of the constellation AUROTA. The southern star marked *B*, is in the constellation TAUrus. If we continue in the same direction southward, we shall perceive a cluster of stars forming the MANGER. A little on the left is the constellation GARNON. This constellation is, if possible, more conspicuous than the Great Bear; but, in consequence of its not being always above the horizon, it is not so convenient to take a starting-point as that of the latter. Ascending from Orion to the Great Bear, in almost a straight line, midway, we shall see two bright stars in the constellation GEMINI: the star marked *a* is called CASTOR, and that marked *B*, POLLUX.

The STUDENT by the above principle, may be led through the HEAVENS in a very pleasing manner; and in the course of a few evenings he will gain a knowledge of all the principal stars; first making himself acquainted with the stars on the MAP, and then comparing them with those of the HEAVENS.

REFLECTIONS SUGGESTED BY THE PRECEDING CHAPTER.

Here let us look up to the *Eternal Reason*; and let us study His laws, and adore Him. Let us contemplate the *UNIVERSE* with a philosophic eye, and search into the relations which by an immense chain constitute one *WHOLE*; and, while we stop to examine the several links of this chain, we must inevitably be struck with those marks of power, wisdom, and goodness, of the *Almighty*, that are every where displayed throughout *His Works*; and feel that there must be a *FIRST CAUSE*. The *UNIVERSE* is essentially derived from this "*FIRST CAUSE*." In vain do we endeavour by other means, to account for what is. We may every where observe *order* and *end*; but this *order* and *the end*, are an effect. What is their *principle*?

To make the *Universe* eternal would be to admit an infinite number of finite beings. By having recourse to an eternity of motion, we establish an eternal effect. Let us therefore observe, that since the *Universe* exists, there is, exclusive of the *Universe*, an "*ETERNAL SELF-EXISTENT REASON*."

These remarks bring us to the *CREATION*. What mind can fathom the depths of this abyss? What thought can comprehend that *power* which calls things that are not as though they were? GOD commands the *UNIVERSE* to be: the *UNIVERSE* is instantly produced!

Can this Divine energy, this inconceivable force, be communicated? And if it can, by what laws can it be effected?

Hence we come to the *UNITY AND EXCELLENCE* of the *UNIVERSE*. The unity of the design leads us to the unity of the *MIND* that conceived it. The *harmony* of the *UNIVERSE*, or the relations which the various parts of this vast edifice bear to each other, prove that its cause is *one*. The effect produced by this cause is *one also*: the *UNIVERSE* is this effect.

It is, all that is, and all that it could be. Possibility is not here what it is in itself, or in the ideas which constitute it, but what is with respect to the collection of attributes of the *ordaining CAUSE*. The *object of Power* is likewise that of *Wisdom*.

The efficacious *will* then has realized every thing capable of being so. A single act of his *will* produced the *UNIVERSE*; the same act preserves it. *God* is what he has been, and what he will be; that which he has willed, he now wills.

The *Divine Mind*, which at once comprehends all the combinations of possible beings, saw from all eternity the *true good*, without deliberation. It has acted, it has displayed its sovereign liberty, and the *UNIVERSE* its being. So that the *UNIVERSE* has acquired every possible perfection from a *CAUSE* in whom *Goodness* is also *Wisdom*.

Every thing in the world is systematical; all is combination, relation, affinity, and connexion. There is nothing but what is the immediate effect of something preceding it; and determines the existence of something that shall follow it.

OF THE DIVISION OF THE STARS INTO CONSTELLATIONS.

The division of the stars into *various Constellations* was an invention indispensably necessary, and was adopted in the earliest ages, for the purpose of communicating ideas and intelligence on subjects of general interest, particularly such as related to the pastoral and agricultural employments; accordingly we find, the *Twelve Signs of the Zodiac* significantly named according to the sense and experience of the people by whom they were invented. Those constellations were not all named at one time, but were

called and marked out at different periods, and by persons of different nations, according to their situations on the Earth, and the objects presented to them, whose forms and names were symbolical with what they intended to represent.

The *CHALDEANS*, who are commonly represented as the parents and inventors of *ASTRONOMY*, knew nothing of some of the signs, now marked out on the ecliptic, they had, at first, observed the extreme points of the *SUN's* departure, or declination from the *Equator*, or what we now call the *Solstices*; and thus named the two signs, or constellations, *CANCER* and *CAPRICORN*, from the properties of those animals, which, in their habits bore resemblance to the course of the *Sun*. The learned *MACROBIUS*, in his treatise *de Saturnalia*,^{*} Book 1st, Chap. 17, defines the fact as follows:

"These are the motives that occasioned the two signs which we call the *doors* of the barriers of the *Sun*, to go by the names of *CANCER* and *CAPRICORN*. The *Crab*, or *Cancer*, is an animal that walks backward, or obliquely; the *SUN* likewise arriving at this sign, begins his retrogradation, and again descends obliquely. As to the *Wild Goat*, or *Capricorn*, its way of feeding is always to ascend and climb the hills as it feeds on the grass, the *SUN* in like manner being come to *Capricorn*, begins to quit the lowest point of its course, in order to regain the highest."

The ancient astronomers of *Chaldea* knew nothing of the third sign in the *Zodiac*, which we call *GEMINI*, or the *Twins*, that asterism, in their division of the *Sun's* path, was filled with the figure of two kids, a resemblance drawn in this instance like all others from the herds, or cattle of which they had the care, this period being yearning time of their flocks, many of which brought forth twins. In short, the whole of their astronomical system was such as applied to their convenience, and was sufficient to guide and direct them in their occupations and wanderings, for their lives being spent in the wide and open country, they had nothing to point out their way in travelling but the *fixed STARS*; yet, *ASTRONOMY*, as a science, made but little progress, extending only to their conveniences in the affairs of life: the *EGYPTIANS* enlarged and improved that into a science, which the *CHALDEANS* had not studied, as a grand object of philosophy and learning: it was from this people, whose hieroglyphical and symbolical mode of representation gave the example, that the *GREEKS* derived the plan of *assorting the STARS*, and, probably, the invention of *LETTER*.

The *GREEKS* found it necessary to cultivate this science on account of their commercial affairs, as well as their avidity in the pursuit of all wisdom. *NAVIGATION* required some certain and specific method of conducting their vessels with safety on their voyages, and the stars offered the best means for that purpose. The *ARGONAUTS*[†] had no other guides for their sea-voyages. From the *GREEKS* this sublime science, as well as most others, was communicated to the *ROMANS*, and they extended it, with their conquests, to all the nations of the world at that time discovered; but the true knowledge of our planetary system, and the philosophy of the *HEAVENS*, were still imperfect, notwithstanding the theories of *POLEMY*, *PYTHAGORAS*, *COPERNICUS*, and others; partly from the want of telescopes to make more accurate observations than they were enabled to do; and partly from the errors of their conjectural ideas upon the subject. Modern philosophers, and particularly *SIR ISAAC NEWTON*, have carried their inquiries to a great extent, but, aided by superior optical instruments, further discoveries and more enlarged notions respecting the "*System of the Universe*" are necessarily taking place. We shall never be able to complete this study. How far ingenuity and perception may go in the progress of man's increasing intelligence is not to be anticipated; but of this we may be sure, that there is an everlasting space for the exercise of the mental faculties which has no termination.

The *Saturnalia* were feasts and revels held by the ancient inhabitants of the Earth in honour of the God *SATURN* or *TIME*.

[†] *Argonauts*, so called from the ship *Argos*, in which *JASON* and his companions sailed to *Colchis*, to fetch away the *Golden Fleece*, no doubt commercial speculation, or discovery; however, it may be disguised by the allegorical description, or fabulous adventure, to which it has been ascribed.

[Nov. 17,

MOUNTAIN GOAT AND SHEEP.

As no two animals are found to be exactly the same, so it is not to be expected that any two races should perfectly correspond in every respect. The Goat and the sheep apparently differ in the form of their bodies, their covering and their horns; but if we come to a close examination, and observe the similitude which internally may be seen, we shall not hesitate to pronounce that they belong to *one family*, and they frequently unite and blend their race.

The Sheep is, in a peculiar manner, the creature of MAN. To him it owes its protection, and to his necessities it amply contributes. On man, indeed, its existence depends; for without his fostering

care, and the interest he has in its preservation, its numerous enemies would exterminate the whole race.

In the remote ages of antiquity, the office of a SHEPHERD was held in high esteem, and the care of a flock thought no degradation to the man who was possessed both of abilities and wealth.

The sheep in its domestic state, seems little calculated to struggle either with danger or distress, as its stupidity appears to render it incapable of exertion, even to preserve its inoffensive life; therefore, if it did not, as before observed, rely upon man for protection, its natural enemies would soon destroy them. The varieties of sheep are so numerous, that no two countries, nor scarcely any two districts, produce sheep exactly of the same kind. A visible difference is found between all the different breeds, either in the



THE MOUNTAIN GOAT AND SHEEP.

size, the shape, the fleece, or the horns. The woolly sheep is an inhabitant only of Europe, and the temperate regions of Asia and America; if it be transported into a hotter country, its wool changes into a long rough kind of hair, which is far better suited to a warm climate, a circumstance which exhibits a remarkable instance of the wisdom and goodness of Divine Providence, in providing for the well-being of all his creatures. The sheep of the mountains also differ greatly from those of the lowlands.

The MOUFLON, which is the sheep in a savage state, is a creature at once bold and very fleet; and is ready to oppose all animals which bear some proportion in size, or to fly from those which would conquer by their strength. No country produces finer sheep than England; those of Leicestershire and Lincolnshire are particularly admired for their weight of fleece, and those of the South Downs and of Wales, for the delicacy and fineness of their mutton.

Some sheep are without horns, as those of Shetland, and in many parts of England.

The animals of the *goat kind* live principally in retired mountains, and have a rank and unpleasant smell, especially the males. Although very shy and timid in a wild state, the goat is easily rendered domestic and very familiar. It is, however, much more calculated for a life of liberty than its more indolent competitor the sheep. It is stronger, swifter, livelier, and more playful; and does not like confinement, but roams about in search of such provision as it most relishes for its food. Its chief delight is in climbing precipices, and it is often seenisking upon an eminence that overhangs the roaring sea. Nature, indeed, has fitted it for traversing these declivities with ease; the hoof is hollow underneath, with sharp edges, so that it walks on the ridge of a house with ease and safety. Sensible of kindness, and grateful for attention, it soon

becomes attached to man. It is very hardy, and easily sustained, and is therefore chiefly the property of the poor, who have no pastures. In a wild state, it is usually found grazing on the rocky sides of mountains. Its favourite food is the bark of trees and shrubs. Its milk is sweet, nourishing, and medicinal.

The goat is an inhabitant of most parts of the globe, but those of *Angora* are the most prized : their colour is of the most dazzling white, the hair long, thick, and glossy, and the inhabitants derive from it a most advantageous trade. The stuffs that are manufactured from goats' hair are known by the name of *camlet*. In many of the mountainous parts of Europe, goats also constitute the principal wealth of the inhabitants.

ST. PATRICK.

The name of the patron saint of Ireland is, we dare presume, familiar even to our young readers ; but his history is, we believe, not very generally known, and therefore we proceed to give a brief sketch of it.

The early ages of Ireland were distinguished by very great turbulence. In their own land the Irish were continually engaged in petty hostilities ; and upon the sea they were notorious as pirates. Upon the opposite coast of Scotland they made very frequent descents, carrying away not only all the booty upon which they could lay their despouling hands, but also great numbers of captives. Upon one of these occasions they landed in the town of Eiburn, in the firth of Clyde, and, as usual, marked their course with plunder and destruction. Besides other booty, they carried away from this luckless town several captives of both sexes. Among these was a youth named Patrick ; who, on the arrival of the piratical expedition in an Irish port, was sold by its commander to an Irish chieftain named Mc Bain. In the service of this chieftain, Patrick, who, when captured, was only sixteen years of age, continued for six years, employed in the grovelling and degrading duties of a swineherd. This mean condition must have been doubly irksome and galling to the youth from his being, for the period at which he lived, well-skilled both in profane and religious learning, and of a nature peculiarly inclined and adapted to learned pursuits. But, however galling and disagreeable his yoke proved to him, he submitted himself to it patiently, and without exhibiting any symptoms of discontent or indignation. His patience, at length, was suitably rewarded ; and he regained his liberty by a mere accident. While watching his master's swine, he observed one of them rooting up something brilliant from the ground, and on approaching to examine it he found, to his infinite surprise and satisfaction, that it was Gold, equal in value to the sum required for his ransom. He immediately applied the welcome gold to the purchase of that liberty of which he had been unjustly deprived.

It is necessary in this place to observe that, though the young captive was a Christian, the Irish were plunged in the most degrading and barbarous heathenism.

During his residence among them, young Patrick had had abundant opportunities to observe the injurious effects produced by their superstition upon their character and condition. It is probable that even during the hopelessness of slavery, he had meditated upon the important and benevolent work of leading them into the knowledge of Christianity. Indeed his subsequent conduct renders this more than probable. For he no sooner regained his liberty than he commenced, wisely and deliberately, the course necessary for qualifying himself for that great and glorious work. His uncle Martin, or Saint Martin, was at that time Bishop of

Tours, in France. Hastening to this relative, the young enthusiast unfolded to him his views and wishes. His description of the miserable condition of the Irish greatly interested the good bishop, who at once commended his pious wishes and assured him of all necessary assistance in their fulfilment. Patrick, though already a scholar, was placed by his venerable relative under the direction and tuition of Germaxus, Bishop of Auxerre. With this learned and pious prelate he remained no less than forty years, sedulously pursuing all the various branches of learning calculated to facilitate his proselytizing endeavours. During this long period of study, Patrick was frequently and diligently engaged in preaching, and made himself exceedingly famous for learning, eloquence, and piety. Having completed the long and arduous course of preparation which he modestly deemed necessary to qualify him for the conversion of the unenlightened Irish, he proceeded to Rome. Celestine, who was then pope, heard his relation of designs and desires respecting Ireland with great attention, and entered most cordially into his feelings. In order the more effectually to serve Patrick, and to forward his great design, the pontiff created him, by anticipation, archbishop of that unenlightened land which he had devoted himself to redeeming from superstitious barbarism.

Towards the middle of the fifth century of the Christian era Patrick landed in Ireland. He now landed not, as formerly, an enslaved youth, but a learned, famous, and dignified prelate. He spoke the language of the country as though he had been a native ; and in that language preached the majestic truths of Christianity. The Irish, even at that early period, were passionately fond of eloquent language ; and Patrick was eloquent both in substance and in manner. His eloquence, and the simply beautiful truths of Christianity added numbers daily to the ranks of proselytes. Among the people of Ireland he was almost miraculously successful ; but he found the superstition of Loigerius, their chief prince,* utterly unconquerable. He did not, directly or indirectly, interfere to prevent his subjects from listening to the Christian preacher, or, from assenting to his doctrines and joining in his devotion. But this was the utmost extent to which Loigerius would stretch his toleration ; he would neither listen to the preachings of the Irish apostle, nor accept of baptism at his hands. Patrick, whom we must now call Saint Patrick, seems to have been, at length, seriously displeased with the immovable resolution, or obstinacy of Loigerius. In his exhortations to him he was unceasing, and he at length declared that, as a punishment for his obstinate superstition, his kingdom should never pass into the possession of his children.

As has already been intimated, Saint Patrick, on arriving on his Christian mission, in Ireland, was nearly sixty years of age, for sixty years more he toiled, zealously and unceasingly, in his benevolent and blessed work. He visited every part of Ireland, and converted Pagans into Christians, and the temples of idols into churches and monasteries dedicated to the one true God. Having spent his life with equal benevolence and success, he at length departed to a better world, at the patriarchal age of one hundred and twenty years.

Light cares speak, great ones are dumb.—*Seneca.*

Fcrtune gives to many too much, but to none enough.—*Laberius.*

We should never remember the benefits we have conferred, nor forget the favours received.—*Chilo.*

* Ireland, at this period, was, as England originally was, governed by several petty and independent princes.

OF LOGIC.

PROBABLY nothing has had a stronger tendency to cause the study of Logic to be neglected than the very unworthy use which was formerly made of it, and the consequent very unworthy opinion which is but too generally formed of it. Mere argument for victory, and subtle mystification instead of sound reason, were, previous to Bacon's time, so general, that Logic became in reality reduced to a system of arguing plausibly, instead of being, as it ought to be, the means of arguing correctly. A vast assemblage of unnecessary technicalities burdened the pupil's memory indeed, but obscured rather than assisted his judgment; and verbal distinctions and formal arguments were so multiplied, that a practised disputant could *formally* prove that to be true, which, to the unlearned reason of every hearer appeared palpably and necessarily false.

It is much to be lamented that men have at any period, however long since, degraded their natural reason, and perverted the rules of a highly important and useful art, by conduct which may be denominated mere mental buffoonery. But though we may very justly regret that men have at any time so far abused their natural and acquired powers, we must beware not to confound their abuse of them with the powers themselves. To abstain from the study of Logic, because in former times Logic has been abused to the purposes of sophistry and puerile trifling, is almost as unpardonable as that abuse itself, and is about as unreasonable as it would be to forego the use of speech, because that excellent faculty has been but too often abused by profane swearers, and by those who bear false witness against their neighbour. Genuine Logic is so far from deserving to be neglected, that practically it is in fact inseparable from virtue; so much so, that the most unlettered hind who acts virtuously, does so in consequence of an logical a train of reasoning as the most enlightened philosopher is capable of. He cannot, indeed, repeat all the long and formidable list of barbarous terms with which but too many professed logicians have encumbered and deformed the science. Where then, it may be asked, is the use of a science of Logic, if an illiterate peasant can reason and act correctly without it? Let it be remembered, that such minds reason logically only upon certain subjects. Though unacquainted with all the forms of Logic, yet they have upon *some* subjects as clear notions as the wisest philosophers; but they have such notions only upon *some* subjects, and those the most common. They know that they may not commit murder, and that they may not steal, &c.; natural reason, unassisted by rules of art, is amply sufficient for obtaining correct conclusions upon such subjects; but in more complicated questions, where truth is to be *discovered*, Logic is importantly useful. In saying that Logic is inseparably connected with virtue, we do not mean to imply that all virtuous men can reason logically upon *all* subjects, but that their virtue is the result of practical Logic: they have formed correct conclusions upon their duty, and they act upon those conclusions; and the most revolting species of crime have frequently had their origin in false reasoning. In Italy, for instance, assassinations were formerly very common, and were commonly committed not by the person whose revenge, or lust of wealth or power was to be gratified, but by wretches who unhesitatingly hired out their daggers at a certain sum. It has often happened that these bravoës, as they were called, have, upon being apprehended and interrogated, excused their abominable wickedness, and with all the appearance too of the most entire conviction of the justice of their plea, upon the ground that the guilt lay not with them, but with those who denounced the victim and purchased his destruction. The wretched men totally overlooked the important truth, that against the tempta-

tion and commandment of wicked men to blood-guiltiness, they had the command of God, awfully and impressively seconded by the instincts of our nature. "Thou shalt do no murder;" a command which fatally and tremendoaly vilifies all the sophistries that man's perverted nature can suggest in palliation or excuse of its acts of vileness.

If it be possible, as it obviously is, for the mind of man to wander so wide of the truth as is above shown, upon the plainest and least disputable topics, how much more must it be liable to do so upon metaphysical, philosophical, and scientific subjects? How are we to divest the reasonings of others of their sophistries, designed or unintentional, and pursue truth through the intricate windings of human error and human subtlety? How, in fact, are we even to be certain of the sanity and legitimacy of our own judgments? We must resort in all these cases to Logic.

Before, however, we proceed further, before we proceed to recommend and to describe Logic, let us *define* it in obedience to the recommendation of Locke, whose recommendation is, in fact, only the recommendation of nature echoed by genius. Logic, then, we define to be THAT ART BY WHICH WE RIGHTLY USE OUR MENTAL FACULTIES IN THE DISCOVERY AND COMMUNICATION OF TRUTH.* And it is sufficiently obvious from that definition of Logic, that it does not consist in a complex and unintelligible muster of pompous words and tumid phrases. It is, in fact, a valuable and a simple art founded upon nature, and highly available to virtue, religion, and happiness; and, being such, we shall endeavour to make our brief sketch of it as practically and extensively useful as our narrow limits will admit of.

By the words "faculties of the mind," which we made use of in our definition of Logic, we mean *memory*, *fancy*, and *judgment*, and these continued from that reason which is man's best possession, and which distinguishes him from, and elevates him above, the inferior animals.

It is undoubtedly true, that men have originally different degrees of mental, as they have of bodily, strength: but the chief difference between them in the former respect arises from their different degrees of education and mental exercise. Should two children be born in the same hour, and with precisely the same bodily endowments, and should the first twenty years of the life of both of them be spent in opposite pursuits; that is to say, should one of them be continually engaged in manly but not excessive toil, and keep regular hours, and partake of wholesome and unsophisticated aliments, while the other led a life of effeminate indolence, rendered the more injurious by a pampered and artificial diet, and by irregular hours and dissipated habits; would there be no perceptible difference in these two beings when they should have attained to their twentieth year! Undoubtedly there would; a difference as great as if they had been born with totally different faculties and constitutions. The former would be manly and muscular in form, glowing with health and spirits, able to bear the vicissitudes of the weather with indifference and impunity, and to relish the platiest viands with an appetite won by healthful toil; while the other would be prematurely aged and infirm, nervous, effeminate, shrinking from the rude blast of winter, and fainting beneath the downward-pouring rays of summer, discontented in mind and worn in body, and oppressed with loathing and disgust while seated at his splendid board, covered with dainty viands and generous wines. This is not a supposititious case; it is merely a faithful representa-

* Jesting Pilate, and many thousands have followed his example, asked "what is truth?" But waited for no reply. Truth may be defined to be the concordance between our ideas of things and their reality."

tion of what every parish in the kingdom contains; healthful and happy poverty, and infirm and miserable wealth.

When we so plainly perceive that habit does so much towards forming and fashioning the bodily frame of man, would it not be ridiculous to doubt or to deny that it hath also a similarly powerful and extensive effect in improving or deteriorating the qualities of the mind? Are we, in other words, able to doubt that the degree and kind in which the mind is exercised has considerable influence in heightening or debasing its original qualities? We cannot doubt that. Then it is certain that we must derive benefit from Logic. That science is founded upon four processes of the mind, viz., APPREHENSION, OR PERCEPTION, JUDGMENT, REASONING, and METHOD.

The first mental process is perception, or apprehension; which is the means of acquiring simple ideas, and has its sources in sensation and reflection. Sensation, as the very word implies, supplies the mind with simple ideas through the medium of the external organs, or organs of sense. For instance, that sugar is sweet we learn from the organ of taste; that a rose is fragrant, from the organ of scent; and that ebony is black, from the organ of sight. Reflection supplies the mind with ideas by its own internal operations, such as pondering, imagining, hoping, or fearing. And the two classes of simple ideas which are thus conveyed into the mind are by it combined or separated into various and almost innumerable new ones.

The simple ideas which are derived from sensation are uniform and unvaried, as, for instance, the ideas of colour, noise, and heat. They are always presented to the mind alike. Those ideas which result from reflection are of the same kind. From these simple ideas the mental operations produce combinations of ideas, called *complex* ideas; which are divisible into two kinds; firstly, the ideas derived from external objects, and which consequently have really existing archetypes; and, secondly, the arbitrary conceptions of the mind, in forming which the mind combines two or more simple ideas together, considering chiefly the number and quality of the ideas united; or it emits from its ideas of substances whatever they *peculiarly* have, and considers their appearance only; or it compares things with each other and examines their mutual connexions or relations.

The above, though a brief account of the division of our ideas, will be found, even when the young student pursues the subject in more laboured and expensive treatises, to be a correct representation of the manner in which our ideas have their birth; and it will also, we believe, be found to include all the various kinds of them.

In order to correct reasoning, whether *in mente** or *viva voce*,† one thing is very importantly necessary, at once to prevent mistake and ambiguity, viz., DEFINITION; which is the interpretation of a complex term by the components of the idea which it represents, and a view of the manner and order of their combination. To define any thing we must ascertain its general nature, and its chief points of resemblance to, and of difference from, other things, and these being combined complete the definition. Definition is highly important, even as merely saving many words and much time; but it is still more so as enabling us to communicate complex ideas which, as they, for the most part, are the creations of the mind, and have no exact and visible archetypes in external nature, would otherwise be wholly incomprehensible.

JUDGMENT upon the ideas which we have collected is the next step in our inquiries; the first of the three foundations of which is INTUITION. Intuitive judgment is formed by a bare inspection of two or more ideas, by which we perceive their concordance or dis-

agreement. Thus, we intuitively judge that "the whole of any thing is greater than any one of its parts." To form this judgment we have only to attend to the nature of the idea represented by the word whole, and that of the idea represented by the word part: we immediately perceive what relation the two ideas bear to each other. EXPERIENCE is the second foundation of judgment; springing from the testimony of our senses. When we pronounce fire to be hot, and ice cold, we base our judgment upon experience; as it also is of all our natural philosophy with which we become familiar either by observation, or by observation combined with experiment.

It is obvious that the two foundations of judgment, which have already been spoken of, would be insufficient for the clearly understanding a particular class of facts; namely, those which we call historical. Intuition serves us for the purposes of science, and experience suffices for the triumphs of art, but for historical knowledge, which includes not merely history properly and formally so called, but also every kind of knowledge which implies belief grounded on the evidence of others, there is a distinct foundation of our judgment, viz., TESTIMONY.

Judgment based upon one or another of these foundations is of two kinds, negative and affirmative. What is spoken of is called the subject, and what is said of it is called the predicate, and the verb which grammatically connects them is called the copula. For instance, "God is great," being the proposition, the first word is the subject, the second the copula, and the third the predicate. The copula suffices for the expression of the agreement of the subject, and predicate when the proposition is an affirmative one, as is seen in that which we have instanced above, but when the ideas expressed in them are repugnant, a negative particle must be joined to the copula to complete the proposition; as, for example, "man is not immortal."

Propositions being thus divided into affirmative and negative, and again subdivided into absolute and conditional; self-evident and demonstrable.

Absolute propositions are those which attribute to the subject some property absolutely inseparable from our idea of it; for example, "God is good;" goodness being inseparable from our idea of God.

Conditional propositions are those in which the predicate is attributed to the subject only on certain conditions connected with the latter. To say, for instance, "Ice is fluid," is to assert what not only is not always true, but what never can be true; because fluidity is contrary to the most essential property of ice. But if we say that "If ice, or frozen water, be exposed to the action of heat it will be reduced to a fluid state," i. e., cease to be ice, the proposition is conditional and correct.

Self-evident propositions are such that their agreement is intuitively perceived; as for instance, that motion differs from rest. A mere glance at the proposition is sufficient to all who understand what meaning is attached respectively to the words motion and rest.

Demonstrable propositions are those which admit of proof, and are correct, but yet are not so clear as to render proof unnecessary: for example, "There was a time when this world had not existence." This proposition is demonstrable, and the contrary one would involve an absurdity. But neither the truth of the former, nor the absurdity of the latter is evident to intuition. Each requires reasoning to convince us; and what is called a demonstrable proposition: the former being demonstrably correct, the latter demonstrably incorrect.

What has been said above will enable our young readers to form

* *In mente*, mentally.

† *Viva voce*, aloud.

a correct opinion of the nature and uses of judgment, and of its importance in Logic. We now pass onward to the next logical requisite, viz.,

REASONING.

Owing to the limited nature of our mental powers, reasoning is not a very convenient instrument in our endeavours at ascertaining truth, but is, in fact, a chief and indispensable one. Reasoning may be simply described to be the ascertaining the relation of two ideas by the intervention of a third; and the principal art, as, also, the principal difficulty in reasoning, is the discovery of ideas fitted for this intervention. For instance, if we wish to show that all liars are in danger of condemnation, we must find a third idea; and that idea must be incontrovertibly correct. To this end we should say, on the authority of Scripture,

All liars are wicked, and

All the wicked are in danger of condemnation; therefore,

All liars are in danger of condemnation.

This is a syllogism; that is to say, a sentence including three propositions, of which the concluding is rendered obviously true by the two preceding ones. These three propositions are called the MAJOR—or greater, as having a larger signification than the subject of the conclusion, which is called the MINOR; and the MIDDLE term, or argument, which shows us the conclusive connexion between the major and the minor.

When syllogisms are formally used, the act of inference is denoted by the use of the word *therefore*,* but in less formal writing, and in common conversation, the word *for*, or *because*, is usually substituted, and has the same meaning and effect.

The formal use of syllogism, though anciently much insisted upon by writers upon the subject of Logic, is, in fact, very unimportant. As a proof of this we need only say that Aristotle, the author of it, makes little or no use of it, and in his admirable treatise on Rhetoric, formally and distinctly pronounces it unimportant by recommending the use of the enthymem; and he himself, in his treatise upon Poetics, makes but little use of mode or figure, and deals very copiously in definition. And it may additionally be observed, that many who are expert in mode and figure are more of sophisters than reasoners, while some of the soundest and most persuasive reasoners could not, upon that system conduct, even respectably, a single argument.

Under the head of reasoning there are four other kinds of argument to be ranged, viz., EPICHIREMMA, DILEMMA, SORITES, and ENTHYMEM.

In EPICHIREMMA proof of the major or minor, or both, is adduced before the conclusion is drawn. Thus, Cicero uses this figure, in substance, through one of his best harangues. "If," he argues, "persons lie in wait to slay a man, it is, by the whole law of nature, and by the general consent and constant practice of mankind, lawful for him to slay them in regard to his own preservation. Now, Clodius, not singly, but attended by an armed and servile band, lay in wait with the obvious design and desire to slay Milo; it was, therefore, lawful and justifiable in Milo to slay Clodius."

The DILEMMA divides an argument into its several members by a disjunctive proposition, and infers of each part that which is to be inferred of the whole. Thus: Either we shall live or die. If we live, we can only live happily by being virtuous; and if we die, we can only die happy by being virtuous; therefore, we ought always to be virtuous.

* I. e., for that; or, on that account.

The SORITES uses several middle terms by which the predicate of the last proposition is connected with the first subject. Of this argument no better specimen can be produced than the frequently quoted one of the jocular speech of Themistocles.* "My son," said that eminent person, "governs his mother, his mother governs me, I govern the Athenians, the Athenians govern Greece, Greece governs Europe, and Europe governs the world; therefore, my son governs the world."

In the ENTHYMEM the premises are not both expressed; one being reserved in the mind. This mode is most generally used in common conversation, and in familiar writings. Thus, for instance, if we say that "there can be no true religion without good morals, and therefore a knave cannot be truly religious;" it is obvious that we suppress the proposition that "a knave is destitute of good morals."

There now only remains one other operation of the mind to be described, viz.,

METHOD.

This is exceedingly important to good reasoning; being alike of use and of ornament. It refers to the proper distribution of all the parts of a subject; every thing being placed in its due situation. In every work of nature, and in all the really good works of art, we have striking examples of the effect and importance of order; and what order is in visible and tangible subjects, method is in thought. There are two kinds of method; each of which may be made very familiar to our young readers by a single and simple comparison. The first of these kinds of method is the synthetic. By this method we proceed to reduce the whole into its component particulars. This method resembles in its process and effect the architectural art; by which the skilful builder collects his various materials, commences the arrangement of them beneath the earth, and rears his stately and towering dome high upwards, as if it were to touch the very firmament.

The second is the Analytic method. In this method we reduce the most sublime and complex truths to their most simple component particulars, showing the very nature of each, and the mutual connexion of the whole.

This method is similar in fact, as well as in name, to the means by which the chemist makes himself acquainted with the various proportions, in which various kinds of simple substances are combined in one great whole, and the kind and degree of the property which each possesses and contributes to the quality of the whole mass.

Though our sketch of the art of Logic is, of necessity, exceedingly brief, and will appear to be still more so if compared, or rather contrasted, with the cumbersome and voluminous quartos written upon the same subject in ancient days; yet we flatter ourselves that we have, even in that brief sketch given sufficient directions to enable any one who will read it with the necessary attention, and make use of its directions with the necessary care to reason, not only without any very glaring absurdity, but even with considerable tact and persuasiveness. And the most comprehensive treatises can do little more for any one; and cannot do even that for those who want natural ability, studious industry, and love of truth, any more than our own brief and unpretending essay

* A celebrated Athenian general, whose biography we have given elsewhere.

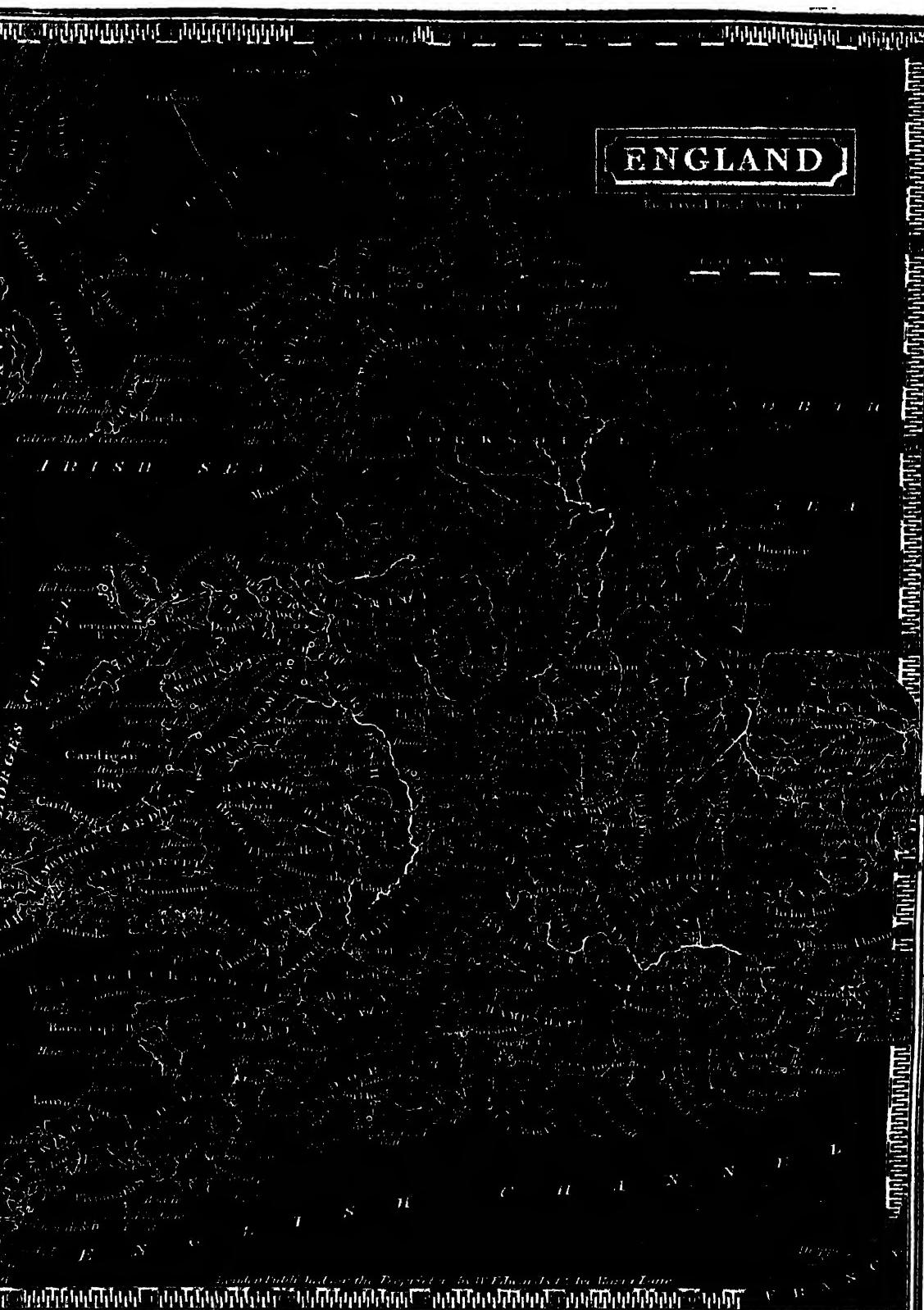
No. XXVI]

GUIDE TO KNOWLEDGE.

ONE PENNY

ENGLAND

The Royal Coat of Arms



PICTURE OF ENGLAND.

We present our readers with two new specimens of maps, viz., the MAP OF ENGLAND and the County of MIDDLESEX, executed in a different manner from any of those not have yet been offered to the public; and we intend to give a series of maps after the same plan, not only of the divisions and counties of the United Kingdom of Great Britain and Ireland, but also of all the nations, countries, &c., of the known world. The former will appear in the "GUIDE TO KNOWLEDGE," and the latter in our projected work, to be called "A PICTURE OF THE WORLD," of which work *prospectus* will speedily be issued.

Our motive for making this map the frontispiece of the present number of the "GUIDE TO KNOWLEDGE," is to draw the attention of our readers to the magnificent work in hand, which will be published in weekly numbers, at the small price of *threepence each*, and when finished will form a most beautiful and complete system of geographical and statistical science.

Not only will our readers be pleased to notice our design with respect to the above-mentioned publication, but we also hope they will find pleasure and information in tracing the specimen here laid before them; the communication of KNOWLEDGE is our grand object, and the examination of a plan and picture of our country, its divisions, &c., even without comments, will give much useful instruction. Thousands of persons, when they hear of transactions and occurrences in various parts of Great Britain, are entirely ignorant of the localities and situations of the places to which they refer, and by that defect they are precluded from a right judgment, and a proper idea of the events and circumstances of which they receive intelligence; they do not know whether the places lie *north or south, east or west*; or in what quarter of the United Kingdom they are situated. So far as regards ENGLAND, separately, the map given herewith will be useful, and afford the opportunity of determining the limits and boundaries of the various counties, showing which are contiguous, and at one view, placing their positions before our eyes, and exhibiting a distinction between such as are inland and such as are maritime, as well as the course of rivers, and many other things of note and importance. Without some knowledge of these particulars all conversation is dark and imperfect, and more than half the pleasure of social communication is lost in the confusion arising from a want of information concerning the important circumstances of various incidental occurrences, and the peculiarities attached to certain places.

We therefore hope, the two maps now presented, will be well received by our friends, and that in examining them, they will find some instruction and gratification, as well as amusement from the novelty of the form and execution. We beg further to state that our future MAPS will be much more perspicuous, and greatly improved; and that in the number for December 31st, we intend to give three MAPS OF LONDON, viz.—1st, LONDON as it was in the time of the ROMANS; 2d, a Map of LONDON in the time of QUEEN ELIZABETH; and 3d, LONDON as it is in the present day; the cost of which will exceed 500*l.*, together with a brief HISTORY OF LONDON from its origin to the present time; forming a double number; the whole without any additional charge; *a thing unparalleled in the whole HISTORY OF THE WORLD.*

GREAT BRITAIN.

GREAT BRITAIN, one of the most powerful empires on the globe, comprises England, Scotland, Wales, and Ireland, to which may be added its foreign possessions in every quarter of the globe.

BRITAIN, although situated in a high northern latitude, enjoys a comparatively mild climate, not subject to those extremes of heat and cold which are experienced in other countries of the same latitude, but farther removed from the sea. The proximity of the ocean, likewise, gives a moisture to the air which, though perhaps inimical to the health of the inhabitants, is highly favourable to vegetation, covering the trees with a luxuriant foliage, and the meadows with a lively green: long-continued droughts, to which continental states are subject, seldom visit BRITAIN, and it very rarely happens that rain continues so long, without intermission, as materially to injure the fruits of the earth; her rivers are seldom subject to inundations and her storms and tempests are mild in the extreme, compared with the hurricanes and tornadoes which frequently desolate the fairest countries of the globe.

In addition to these natural advantages, BRITAIN is peopled with a race of men, remarkable for their bravery in war, their hospitality in peace, their commercial enterprise, their magnificent liberality, their unshaken loyalty to their king, their attachment to the constitution, the encouragement they afford to learning and the fine arts, and their freedom from religious bigotry and superstition. In speaking thus highly of the inhabitants of GREAT BRITAIN, we must be understood to do so generally; no doubt, thousands of individuals may be found within its borders to whom this panegyric will not apply; but these exceptions are only spots in the national character, too minute to be perceived without a close inspection.

BRITAIN, since its history is known, has undergone as many revolutions as any country on the globe, in the same space of time, yet each contributing to that improvement which has rendered it one of the most powerful and enlightened nations under the sun.

If we trace its history from the time of the *ancient BRITONS*, who, little better than savages, went nearly naked, painted their bodies, lived in huts made of sods, and were unacquainted with the art of cultivating the ground, we shall find that this observation is well-founded. It is true, that the ROMANS, during their occupation of the island, introduced a degree of civilization superior to that of the subsequent masters of the country. They built cities and towns, well-fortified and adorned with palaces and temples; but this was confined almost entirely to the spots which they occupied, and was by no means general throughout the isle; else, how can we account for the helpless state of the BRITONS after the ROMANS had deserted them. Had the latter instructed them in the arts of building and fortification, and in the disciplining of their forces according to the rules of military tactics, a few Saxon pirates could never have subdued them so easily—they would not have been so dastardly in the defence of their property and their native soil.

The SAXONS, though almost wholly devoted to war, were probably advanced some degrees higher in the scale of civilization than the BRITONS, of whose country they took possession; and when missionaries from ROME came to preach Christianity amongst these semi-barbarians, they introduced some of those LIBERAL ARTS, which Ovid justly says, "soften men's manners, and prevent them from being completely brutal." Ecclesiastical Architecture was amongst these, and though the style, called

Saxon, was heavy and inelegant, it was grand and massive, and much superior to any thing of the kind, except the Roman works, which before existed in Britain

It is not probable that the DANES contributed much to the advancement of civilization among the Britons; they were rude and ignorant pirates, with whom the latter were constantly at war, and who never made a secure and lasting settlement in the island. On the contrary, their invasions retarded the march of improvement, and it was not until they were wholly subdued by Alfred, that that monarch found leisure to cultivate literature and the arts, of which he was so justly fond, and to the advance of which in his dominions he so largely contributed.

The NORMANS, though of Saxon origin, were rather more refined than their brethren in England, in consequence of their proximity to the French court. But it was the CRUSADIS, although for a time they induced much distress in the Christian nations of Europe, that contributed most largely to their after improvement. Whatever learning had survived the ravages of the barbarians, was to be found in the East, and although the warriors of the Cross cared but little for letters, and the polished manners of their opponents, they insensibly imbibed something of the latter; and there were a few among their numbers who had a taste for the former, and brought home many valuable works, which, laid up in monasteries, in due time contributed greatly to the diffusion of that light, which now seems kindling into a full effulgence of glory.

But, while BRITAIN continued to profess the *Roman Catholic religion*, there were many opposed to the advance of wisdom and knowledge. That RELIGION is averse to free enquiry, and requires that unqualified assent to its doctrines, and compliance with its injunctions, which a cultivated mind cannot yield. Since the REFORMATION, however, and the enjoyment of religious freedom, BRITAIN has been rapidly rising to an elevated point of grandeur and dignity among the nations of the world. Universities and seminaries for the higher branches of learning are increasing in numbers and importance;—her metropolis is now famed, not only as the largest and most commercial city in the world, but as one of the most elegant and commodious; abounding with edifices worthy of ancient Greece, producing specimens of sculpture, architecture, and painting, which may justly vie with those once accounted the wonders of the world, and affording every luxury both for the body and the mind, which the most fastidious taste, the most refined intellect can desire. Yet BRITAIN has not yet reached the acme of her glory. Reposing gracefully on her laurels, and at peace with all the world, she is assiduously cultivating those arts which enoble man, which afford him more real delight, and more truly benefit the country at large, than the most splendid victories, the most extensive conquests.

T H E C O U N T R Y.

IT has been very well said by a celebrated author, that "great cities are the graves of the human species." Another author has observed that if the havoc committed upon the human race by the unwholesome atmosphere and pernicious habits of great and populous places were equally made in the country, the human kind could only be perpetuated by a continual series of special miracles. Great cities would, in fact, very soon be depopulated, were not the havoc which death makes in them continually repaired by the influx of population from the country. The atmosphere of populous places is, in truth, being perpetually poisoned and corrupted. Putrid animal and vegetable substances necessarily abound in them; high walls and crowded houses obstruct the free passage of the air;

and while miasma thus created and confined are poisoning the atmosphere, thousands of human beings are breathing it, and, of course, adding to its impurity. It is impossible that such a state of things should be otherwise than unfavourable to human health, and destructive of human life.

In the country, on the other hand, every circumstance is favourable to man. The air, the scenery, the nature of his occupations, the habits of life which those occupations superinduce, and the exemption from the perpetual strife and agitation which are almost inseparable from a town life, render his life not only much more pleasant but much more healthful, and, upon the average, much more extended.

Had we all a free choice as to a town or a country life, few, we apprehend, would hesitate as to embracing the former. But such is not, and cannot be the case. Towns are necessary. The residents in the country need a thousand things which can only be produced by the association of great numbers of men. Husbandmen are necessary to cultivate the earth; but they must have tools, and apparel, and furniture, and houses, and these can only be produced by the residents in towns.

Happily, the dispositions and tastes of men are as various as the circumstances in which they are placed by their Creator. The dwellers in the free air and beautiful scenery of the country would shrink from being compelled to pass their lives amid the smoke and bustle of a populous town. The inhabitants of the town, contrariwise, would tremble at the darkness and stillness which mark the night-time in the country, and would be rendered uneasy by that very calm, which, to a lover of nature, is so exceedingly delightful and inspiring. All this is ordained for the wisest purposes, and for our happiness and welfare. All are thus rendered contented with their condition, and efficient in their employment.

But the pure air of the country, and its exceedingly beautiful scenery, have so excellent an effect upon the human health, and upon the human heart, that we recommend our readers never to neglect a proper opportunity of inhaling the one and beholding the other. The busiest and most important avocations afford some few snatches of leisure; and these can never be better or more wisely employed than in seeking the beauties of nature in their native haunts. During three-fourths of the year the country presents a perfect succession of beauties to the eye of taste, and of enjoyments to the well-attuned soul; and there are few indeed who cannot contrive to quit the busy hum and bustle of the town for a brief space, during one or the other of those periods.

LITERARY CHARACTERS.

SOCRATES did not blush to play with children. Tycho Brahe diverted himself with polishing glasses for spectacles. D'Andilly, the translator of Josephus, amused himself in cultivating bees. Barclay, in his leisure hours, was a florist. The great Arnould, in his hours of relaxation, read any amusing romance that came in his way; as did Warburton, Blair, and the late Lord Camden. Others have found amusement in composing treatises on odd subjects. It seems, indeed, according to Johnson, to have been in all ages the pride of art, to show how it could "exalt the low, and employ the little." To this ambition, perhaps, we owe the *Frogs* of Homer; the *Gnat and the Bee* of Virgil; the *Butterfly* of Spencer, &c., &c.

He that knows useful things, and not he that knows many things, is the wise man.

Death has nothing terrible in it but what life has made so.

When men speak ill of thee, live so as nobody will believe them.—Plato.

The useful and the beautiful are never apart.—Periander.

The world is a great book, of which they that stay at home read only a page.—Augustine.

Speech is the gift of all, but thought of few.

It is as hard for the good to suspect evil, as it is for the bad to suspect good.—Cicero.

He must be a wise man himself who is capable of distinguishing one.—Diogenes.

You may judge of the master by the complaint he makes of his servants.

GUIDE TO KNOWLEDGE

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MIDDLESEX.

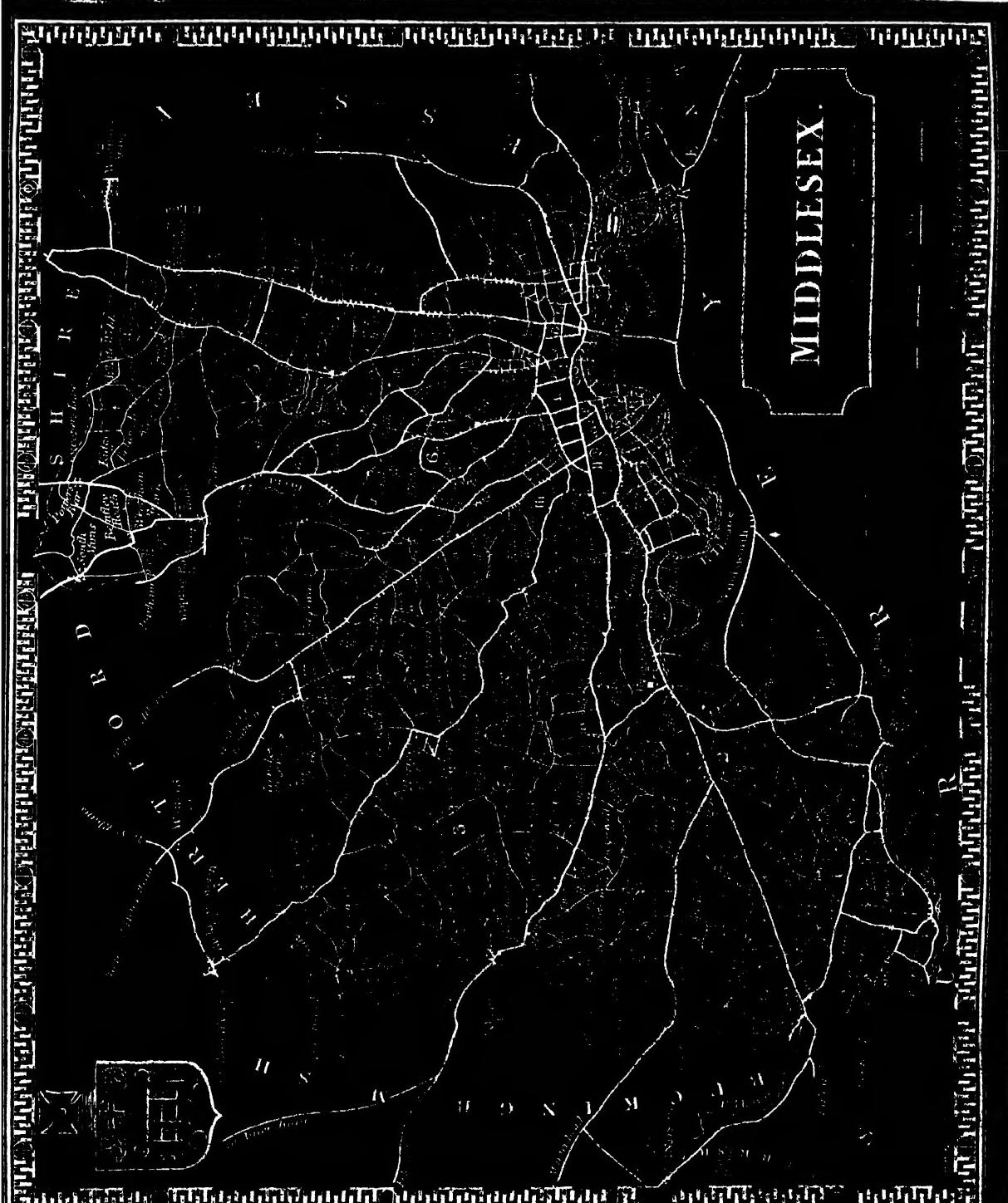
REFERENCE TO THE HUNDREDS.

- | | |
|--------------|-------------|
| 1 Spelthorne | 4 Gore |
| 2 Isleworth | 5 Edmonton |
| 3 Elthorne | 6 Ossulston |

REFERENCE TO THE BOROUGHS.

- | | |
|-----------------|-----------------|
| 1 London (City) | 4 Finsbury |
| 2 Westminster | 5 Tower Hamlets |
| 3 Marylebone | |

MIDDLESEX.



MIDDLESEX.

MIDDLESEX received its name from its situation in the middle, between the three kingdoms of the east, west, and south SAXONS.

This county is bounded on the north by HERTFORD-SHIRE, on the east by ESSEX, on the south by SURREY, and a corner of KENT, and on the west by BUCKINGHAM-SHIRE.

Though one of the least counties in England it holds the very first rank both for wealth and importance. It measures twenty-two miles in length, fourteen in breadth, and ninety-five in circumference.

Its chief river is the THAMES, those of less note are the *Lea*, *Coln*, and *New River*. The air is healthy; the soil, in general, a lean gravel, is naturally unproductive, but owing to its vicinity to the metropolis, much of it is converted into rich beds of manure, cloathed with almost a perpetual verdure. MIDDLESEX may justly be considered as a sort of demesne to the metropolis, covered with villas, intersected by innumerable roads, and encompassed by gardens, pastures, and enclosures, for its convenience and support. MIDDLESEX swarms with inhabitants, in its numerous and extensive villages, but no large town can exist in the vicinity of so powerful a magnet as LONDON, which so strongly attracts inhabitants from every part of the country.

This county sends eight members to parliament; namely, two for the county, four for LONDON, two for Westminster, to which will shortly be added, two for Finsbury, two for Mary-le-bonne, two for the Tower Hamlets, and two for the borough of Lambeth. It was calculated many years ago, by DR. PRICE, that LONDON held one-ninth of the entire population of ENGLAND; and from the vast increase of the business of that city, and the immense additions which speculation and actual demand have caused to be made to each of its widely extending suburbs, we can readily observe, that that proportion is still kept, which, indeed, the last census fully testifies.

Owing to the residence of the Court at Westmister, the immense business of the City of LONDON, and the vast expenditure of the resident population, added to the fact that LONDON is the centre of an enormous commerce with every part of the known WORLD, MIDDLESEX may be considered greatly superior to any other county of the kingdom. This county, as before observed, is remarkable for the salubrity of its air. Even the METROPOLIS, which is so crowded with inhabitants, is as little subject as any other place in ENGLAND to epidemic or infectious diseases, and the duration of human life appears to be no more brief there than elsewhere.*

One of the greatest ornaments and most important possessions of this county is the beautiful and wealthy laden river—the THAMES. This river, indeed, waters several other counties; but it is for LONDON, the capital not only of Middlesex, and not only of England, but of the whole world, that it lavishes its chief riches. The amount of merchandise annually imported to, and exported from the Port of London, almost exceeds belief; and, without any hyperbole, the whole civilized world may be said to be engaged in its trade, and interested in its prosperity. Though London is the capital of Middlesex, the election of knights of the shire is held, not at London, but at Brentford, a straggling, and irregularly built, but populous and

busy town, about seven miles from the west of the metropolis. Besides Brentford, this county has several other towns, but they are of minor importance; these are Staines, Uxbridge, and Enfield. Many single parishes near London are fully as large, populous, and wealthy, as the considerable towns of other counties. Among these are Hampstead, Highgate, Islington, Hackney, Stepney, Fulham, Hammersmith, Kensington, &c.

To attempt to enumerate the various persons remarkable for genius who owed their birth to London, would be to enter upon a task to which the limits of this work deny even a fortieth part of the necessary space. We shall therefore name only three, the great LORD BACON; JOHN MILTON; and SIR CHRISTOPHER WREN, the architect of ST. PAUL'S, and of no inconsiderable portion of the city itself.

This county is situated in the Home circuit, and in the diocese of London.

ON THE CONSTITUTION OF ENGLAND.

WHATEVER may be the form or title of a government it has three distinct functions; the regulation of the relations of the country in which it obtains with foreign powers, the enactment of laws for the internal government of the country, and the execution of the provisions of those laws. Now, if the same power makes laws and carries them into execution, the safety of the subject rests wholly upon the wisdom and equity of that power; for it cannot merely prescribe rules without control, but it can enforce them without responsibility. Accordingly we find, that in those countries where the princes are the most arbitrary and unsparing, and the subjects the most slavish and oppressed, the public affairs are conducted in this wise. In these governments the same power determines in all public affairs, enacts all public regulations, and decides upon all individual conduct; and, the consequence is, that the governments are ferocious, and the people miserable. In Venice and other republics,* and in the Turkish empire, this system obtains and the effect is the same. The Bridge of Sighs, and the moat of the Seraglio testify, with a melancholy and convincing voice, that arbitrary power is every where alike, and that it is as terrible when exercised by a doge and council as when vested in a Moslem emperor. The fiat of the one is as ruinously terrible as that of the other; and the sumptuous gondola contains as much agony and horror as the light and gliding caïque. The whispered slander of a servile eunuch is no more terrible, or more certainly fatal, than the anonymous accusation, true or false, deposited in the lion's mouth; either is sufficient to ruin the wretched being at whose destruction it aims and to glut the vengeance of his secret enemy.

Now, in England, the powers of government are so completely and so equitably divided, that the subjects are secure from any danger of being oppressed by their king, and he is equally secure from any improper interference or restraint of his people. The English constitution secures to each class its rights, and imposes upon each class its duties; and each class is a check upon the ambition, profusion, or injustice of the other.

The king's prerogatives are extensive, but they are defined. He receives embassies, and declares war or peace with foreign powers; he appoints his own ministers, and he has the enviable power of mitigating the rigours of the law. But the king cannot spend a shilling of the public money beyond that which is granted to him by parliament; and in all matters of private rights, he and his family are obliged, in common with the meanest subject, to appeal to the courts of law. Nor is this merely theory, as was proved during the last reign. An exalted personage had unwittingly approached upon the premises of a mere tradesman, who appealed to the law, and had the encroachment abated, besides receiving compensation for the injury which he alleged that he had sustained.†

The king appoints his own ministers; and as they are respon-

* To this it may be added, that London has suffered loss, in proportion to its number of inhabitants, by the late awful visitation of the CHOLERA MORBUS, than any other part of England.

† i. e., to called; for the power is really vested in the hands of a few.

† The individual in question was a poultice, Mr. John Horne, father of the celebrated John Horne Tooke, author of the "Divertissements of Purley."

sible, even *capitally*, to the parliament, they cannot consent to any arbitrary power on the part of their sovereign, who is presumed to do nothing of a public nature without their advice or concurrence.

The houses of Lords and Commons enact all laws; and though an arbitrary monarch, or rather, a monarch who desired to be arbitrary, could withhold his royal assent from their enactments, and thus render them of no effect—the king's sanction being indispensable to the validity of the laws, yet, as they could refuse to grant him a shilling towards his own and the national necessities, his obstinacy would soon yield to his need. Here then, we see, that before oppressive laws could be enacted in England, the people must join with the king in wishing for an oppressive code; for the parliament, whose functions continue only seven years, is elected by the people, and *must* express their wishes, uphold their rights and faithfully consult and protect their interests.

But the liberties of the English people are still further guarded and ensured; for when the laws are made by the mutual consent of two of the three divisions of the constitutional government they are executed by a *third*. We say by a *third* for simplicity's sake but, in fact, the execution of the laws is entrusted to several divisions unconnected with, and forming a perfect check upon, each other, as police magistrates, judge, juries, &c.; but judges and juries, which form a criminal or civil court, are the most vitally important, and to them we confine our remaining observations. The judges are appointed by the king, and they deliver the law to the juries, receive their verdicts, and pronounce sentence *according to law*, upon those persons whom the juries decide to have incurred any of the various penalties awarded *BY THE LAW* to certain species of offences, against the peace, property, lives, or good manners of society, or any individual member of it. But the judge, though it is his duty to *explain the law to the juries*, cannot interfere with their judgment of the facts. He can and must tell them that murder or that theft is punishable; he can tell them that the king and the whole people, by their representatives, have determined that such and such actions are contrary to law, and may not be committed, but he does not dare to tell them that a prisoner or defendant, A. B. or C. D., has committed such or such an action. It is for them to determine upon the guilt or innocence of the prisoner or defendant; and they have a direct interest in deciding impartially; for, as on the one hand they may be robbed or maltreated as the prosecutor alleges himself to have been, so, on the other hand, they may be falsely accused, as the prisoner alleges himself to have been, and as they are bound to presume that he is innocent until *it is proved, LEGALLY PROVED* that he is guilty.

Now this, in all ordinary cases, it must be allowed, is ample security against oppression. The jury being strangers alike to the prosecutor and the prisoner, cannot have a bias towards either; but in cases of *treason*, it may be supposed that some might be base enough to violate the first principles of justice, and, being summoned to decide between the king and one of his subjects, unjustly decide against the latter in order to find favour in the sight of the former. This objection seems very startling and very important; for it seems to point out an indirect means of the monarch acting as an oppressor in the only case in which he could by possibility wish to do so. But there are happily two facts which dissipate this objection; and show that even could a king have a *personal enemy* among his subjects, that enemy would be safe from oppression. If he acted unlawfully he would be punished according to law, *exactly as any one else would*; but his private offence against the king, as an individual, could *neither have any effect in causing the JURY TO PRONOUNCE HIM GUILTY, OR IN INDUCING THE JUDGE TO AWARD HIM A PUNISHMENT DISPROPORTIONATE TO THE OFFENCE PROVED AGAINST HIM*. For, in the first place, the jurors each take a most solemn oath that they will "*a true verdict give, according to the evidence*," and it is not in the power of any one to take twelve men at a venture from the rank of yeomen and householders, and persuade them to commit the terrible and fatal crime of perjury. It is most true that the officer who empannels the jury is an officer of the crown; and we may, therefore, for argument's sake—suppose, that in selecting a jury he will be more likely to select persons whose loyalty and attachment to the monarch are well-known, than persons who are known or suspected to sympathize with the treasonable devices of the prisoner. But then, be it observed, the accused has a right to *challenge* the jury; a right which his counsel do not fail to exercise if there be any ground for supposing that any one, or all, of the jury is not strictly impartial.

Thus, in England, the liberty, property, or life of the humblest

individual cannot be invaded by the hand of oppression without the concurrent villainy of the three estates of the realm, without the unanimous perjury of twelve (or, if the prisoner challenge the first jury, of twenty-four) persons who are strangers to the prisoner and to each other, without the perjury of the witnesses, and the treason of the prisoner's counsell (Great and glorious is the security of the subject, accordingly. The only circumstances which could enable the hand of wicked power unjustly to crush, are *impossible* circumstances! experience as well as reason proves the impossibility of their occurrence, and that impossibility is so well and so widely known, that the meanest peasant has content and security in his heart, and honest and fearless independence stamped upon his manly brow. It is not merely the salubrity of our climate, or the fertility of our soil, our ocean-girt position, or our consequent superior naval abilities, to which England owes its wealth as a nation, and the happiness of its inhabitants as individuals. These advantages would be lost upon a nation of slaves or of turbulent demagogues; but in the hands of Englishmen, who are free, and who are worthy to be so, they are invaluable. Every man exerts himself for his own advantages, and in doing so adds to the prosperity of the nation; and every man exerts himself to the utmost because he knows that the enjoyment of whatever he may honestly acquire, will be secured to him and his posterity, by the glorious and unrivalled ENGLISH CONSTITUTION.

Julius Cesar, after fighting fifty battles, in which he had slain upwards of a million men, was killed in the senate-house.

It was a custom among the Romans to strew the tombs of their friends with flowers. The tombs of the Roman princes were watched by the friends or domestics of the deceased, for some time after their interment.

* * THE EDITOR has been called upon, and therefore feels it necessary to make an apology for one or two oversights in some of the earlier numbers of this work. When those numbers were issued from the press the Editor was considerably engaged with other matters, and residing at a distance from town: it happened, from some mistake, though well-meant, motive of the publisher, that the name of Mr. RENNIE, the well-known Professor of Natural History, was conspicuously placed on the cover of some numbers: this was entirely against the wish of the Editor, and seemed, undoubtedly, to imply that Mr. RENNIE was either the author or approver of all the articles relating to that science in which he is particularly distinguished. Men of talent are often found to be of the irritable genus, and when any thing of inferior execution attempts to creep under their sanction, they are apt to feel indignant, lest the world should think, that great men, as well as others, may sometimes be little in their conceptions. No wonder, then, if Mr. RENNIE has felt himself aggrieved by this *untoward circumstance*; for which the Editor is very sorry, but in no way responsible. From this work, all trifling subjects will, for the future, be excluded; and nothing that *CAN require* the gilding of a name will be received: we will have a sterling currency of original thought and mind in our pages; and cheerfully submit both to the scrutiny of a discerning public. *Gold is gold* whether it have a stamp on it or not; and even the head of EPAMINONDAS upon copper, could not effect a transmutation of that metal, either in substance or value. We disclaim and deprecate every semblance of ostentation; but we are confident in our means, and determined in our purpose, to secure public favour from our own resources, without seeking for adventitious support. We wait patiently, and without fear, for whatever estimate our judicious and intelligent readers may form of our little work; and we promise that our endeavours shall be to communicate Knowledge mixed with morality; the seeds of which being sown together may spring up in equal strength and luxuriance in the youthful mind: and this design we offer as our chief recommendation.

To several gentlemen for their kind expressions of approbation, he begs to offer his grateful thanks; and will always pay particular regard and respect to *cautious* criticism.

THE GUIDE TO KNOWLEDGE.

EDITED BY MR. W. PINNOCK,

AUTHOR OF "PINNOCK'S CATECHISMS," "GRAMMAR OF GEOGRAPHY AND HISTORY," ETC., ETC.

No. XXVI

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PRICE
ONE PENNY.

SUGAR.

SUGAR is an article that enters into almost all the food of our childhood, and into many of those of our more advanced life. Indeed, even where sugar is not *apparently* present, it, or at least its saccharine principle, is present in every thing we eat. And the more this abounds in any article of food, the more nutritious it is.

Sugar, properly so called, is a vegetable salt procured by expression from a cane or reed, which grows very abundantly in the islands of the West Indies, and in some parts of the continent of South America. The cane, when arrived at a proper degree of ripeness, is cut down, and ground in a sugar-mill. This extracts all the moisture from the pith of the cane, leaving nothing behind but the wood. The juice, thus obtained, is put into large coppers, and boiled four times successively. During each time of boiling, a thick and dark-coloured scum rises to the sur-

it coherence and consistency when it is allowed to cool. When the fourth boiling of the juice is completed, it is poured into large moulds, and when thoroughly cooled, the mass is sugar.

TEA, COFFEE, AND CLOVES.



SUGAR.

face of the liquor, which is removed with the greatest care; as, if suffered to remain, it would, as the juice cools, disperse itself among the whole mass, and greatly deteriorate its quality.

While the operation of boiling is going on, a certain quantity of quicklime is put into the juice, causing the impurities to rise to the top of the mass, and, also, giving

VOL. I.



TEA.



COFFEE.

SOME of the pleasantest and most valuable of the articles of our daily consumption are natives of distant lands and hot climates. This is the case with the articles whose English names stand at the head of this paper,

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The two former of them are particularly valuable; for they are so generally, nay, so almost universally consumed by our adult population at their morning and evening repasts, that, though they originally were consumed only by the wealthy, and as matters of occasional luxury, they may now be very fairly considered to be among the actual daily necessities of all ranks of society in England. How few of us while drinking our fragrant, and refreshing tea or coffee, consider how very far it has been brought for us, and how much toilsome labour has been performed to enable us to partake of it. Many, very many, thousands of our fellow-creatures must toil long, and hard beneath the enervating and painful influence of an intense heat ere the materials for the breakfast of the humblest Englishman can be produced, and very many more must sacrifice their rest and comfort, and peril their health and lives ere those materials can be conveyed to this country. Yet how few of us consider this, or feel any portion of that gratitude which we pre-eminently owe to God, for having exempted us from the extreme toil and cares under which so many of our fellow-creatures labour!

The shrub whose leaves, by infusion in boiling water, furnish us with the delightful and wholesome beverage called tea, is a native of several parts of Asia. It is cultivated rather largely in Japan, but it is in China chiefly that it is grown as an article of commerce; and it is from that singular country, that England and other nations of Europe derive their immense supplies of it. Though we have various sorts of tea, they all are the leaves of the same shrub. The difference in strength and flavour is chiefly produced by artificial means resorted to both in China and in this country. And there is, also, a difference in the strength of the leaves according to the period at which they are gathered. The leaves are gathered at three different periods of the spring of the year; and those which are earliest gathered are the most fragrant, and yield the strongest and finest flavour. An illustration of this remark is furnished in the fact, that the first gathering, which is called "IMPERIAL Tea" is not allowed to be exported from China. The merchants of Holland, indeed, vend an article which they call the "IMPERIAL Tea;" but, it is perfectly well known that it is only the Tea of the second period of gathering. The trade in tea between this country and China is perfectly astonishing; and the revenue of both countries, as well as the individuals engaged in the traffic, is immensely benefited by it.

Next to Tea, perhaps the most general and the most salubrious beverage made use of in this country, is COFFEE. It is the kernel of a kind of fruit not very dissimilar in size and shape to our cherry. The tree which bears this truly valuable fruit was originally peculiar to Arabia the Happy,* but it has been very successfully transplanted into several other hot countries; and the coffee of the island of Martinico is thought by very good judges to be but little, if at all, inferior to the celebrated berry of Mocha.

The bean-like kernel which is so valuable in its uses is, when taken from the fruit in which it grows, of a pale yellow colour, slightly approaching towards a very faint green. The best kind of coffee, and particularly if well roasted, keeps nearly the same colour after it is imported into England. That which has a dark brown, or a

blackish cast, is either an inferior coffee, or too highly roasted, or both. When the fruit is judged to be sufficiently ripe, it is plucked and laid upon mats exposed to the strong heat of the sun. When, by this process, the fruit is thoroughly dried, it is passed under heavy roller, and the kernel, or coffee-berry, is thus disengaged from it. Each coffee-berry, as we see it, is only the half of one of these kernels. When the kernels are all freed from the fruit, they are again laid upon the mats and exposed to the sun's rays, and thus thoroughly dried. This brings them to the state in which they are fit to be shipped, and in which we receive them in this country. Cloves are of less general, and perhaps, also, of less important usefulness than the two articles above spoken of. They are chiefly used to give a flavour to fruit pies and puddings; though they are, we believe, also used in giving the flavour as well as the name to a kind of liqueur. The Cloves, as we have them, are merely the flower-buds of a tree which grow, without cultivation, in the Moluccas; and which the Dutch, who were the first to discover and make use of the valuable property of the buds, transplanted to Amboyna, where they cultivated it with great care, and with proportionate success. The tree whose buds are thus converted into an important article of commerce and profit, bears a considerable resemblance in size and form to our laurel tree. The Cloves grow in thick bunches at the very extremity of the bunches. Their colour, when they first make their appearance, is a light green, which the intense heat of the climate changes successively to yellow, red, and the deep dark brown which we receive them with.

It is wonderful how various are the sources whence we derive our comforts and our luxuries. And it is still more wonderful how little pains we bestow upon investigating those sources, and how little gratitude we feel and manifest towards him to whose benevolence we owe them. Independent of the great share which ignorance may fairly be assumed to have in the production of this want of gratitude, ignorance upon such subjects is always disgraceful, and not unfrequently productive of shame and annoyance to those who possess it. To praise the flavour of an article of comfort or luxury, and then to confess ourselves ignorant of its origin, and natural history, is surely very discreditable. To the pain of avowing such ignorance, all young persons are liable; and all ingenious and well organised minds would suffer an exceedingly painful emotion, should some well-intended question draw such an avowal forth from them.

If there were another reason for our recommending the pursuit of general knowledge, we should consider this single one, amply cogent and imperative. But, in fact, when we recommend this kind of study, we do not require a painful, a difficult, or a disagreeable task. The means are as pleasant and amusing as the end is useful. Every hour spent in the pursuit of such knowledge, is an hour which is not only well and profitably, but also very delightfully spent. And, comparatively speaking, a very few of the hours of our life thus spent will be productive of great credit, and of great service to us during the whole term of our existence.

Courage consists not in hazarding without fear, but in being resolutely minded in a just cause.—Plutarch.

KNOWLEDGE is proud that he has learned so much; WISDOM is humble that he knows no more.—Cowper.

He is sufficiently well learned, that knows how to do well, and has power enough to refrain from evil.—Cicero.

THE ADVANTAGES OF CONVERSATION.

CONVERSATION calls to light what has been, odged in all the recesses and secret chambers of the soul. By occasional hints and incidents, it brings former useful notions into remembrance; it unfolds and displays the hidden treasures of knowledge, with which reading, observation, and study, had before furnished the mind. By mutual discourse, the soul is awakened, and allure to bring forth its hoards of knowledge, and it learns how to render them most useful to mankind; but a man of vast reading without conversation is like a miser, who lives only for himself.

In free and friendly conversation, our intellectual powers are more animated, and our spirits act with more vigour in the pursuit of unknown truths. There is a sharpness and sagacity of thought that attends it, beyond what we find whilst we are shut up in retirement. Often does it happen, that in free discourse new thoughts are strangely struck out, and those seeds of truth sparkle and blaze through the company, which, in calm and silent reading, would never have been excited. By conversation, we both give and receive this benefit; as flints, when put into motion and striking against each other, produce on both sides living fire, which would never have risen from the same material in a state of rest.

In conversing with ingenious and learned men, we bring our sentiments to the test, and learn in a more compendious way what the world will judge of them; how mankind will receive them; what objections may be raised against them; what defects there are in our schemes; and how to correct our mistakes; which advantages are not so easily obtained by our private meditations, for self-love, as well as the narrowness of our views, tempts us all to pass too favourable an opinion on our own schemes, whereas, the variety of genius in our opinion will stand in the view of mankind at large.

Another considerable advantage of conversation is, that it furnishes the student with a knowledge of men, and the affairs of life, as reading furnishes him with book-learning. A man who has dwelt all his days among books may have amassed together a heap of notions, and still be a mere scholar, which is a contemptible sort of character in the world. A hermit, who has been always shut up in his cell, in a college, has contracted a sort of mould and rust upon his soul, and all his airs of behaviour have a certain awkwardness in them, but these awkward airs are worn off by degrees in company; the rust and the mould are filed and brushed off by polite conversation. The scholar then becomes a citizen or a gentleman, a neighbour or a friend; he learns how to dress his sentiments in the fairest colours, as well as to set them in the clearest light. Thus, he produces his ideas to public inspection with honour, he makes use of them in the world, and he improves his theories by practice.—*Watts.*

THE GIRAFFE.

ANCIENTLY, the Giraffe was tolerably well known in Europe. In the triumphal games of the Circus, and in grand triumphal processions, the Romans frequently exhibited several of them at a time. But for a space of nearly four centuries this very beautiful and singular animal was never seen in any European country. This circumstance, added to the exaggerated statements made of its peculiarities by some romancing old writers, actually caused a very general doubt whether such an animal were really in existence. It was not until within the last half century that this doubt was dispelled by the narrative of a celebrated French traveller,* who killed one in Great Namaqua Land, in Africa. His narrative of the occurrence is extremely graphic, and indicates all the delight which an enthusiastic traveller may be well supposed to have felt in being the first to solve a doubt so generally felt, and so unreservedly expressed by the naturalists and men of letters. His account of the animal is so correct in its agreement with the characteristics of the beautiful creature which was presented to the late king, George IV., and which, unfortunately, sank beneath the change in its climate and habits, that we shall avail ourselves of the substance of it.

The Giraffe has been erroneously represented to feed solely upon the leaves and tender twigs of a species of the acacia, peculiar to that part of Africa in which the animal is found. This is not the case; for, though the animal is very partial to this food, it grazes, when the pasture is sufficiently plentiful to allow it to do so, just as the cow does; which animal it also resembles in being ruminant, and in having cleft hoofs. The head and face of the animal are slender, and deer-like; which resemblance is particularly striking in the clearness and brilliancy of the eyes. At the upper part of its head the Giraffe has two bony excrescences, which have, at a distance, the appearance of incipient horns. The mouth is singularly small, and the jaws are each furnished with six molar teeth on each side, but the upper jaw is destitute of *incisors*, of which the lower one is provided with eight. The legs are slender, except at the knees, which have a remarkable prominence of bone. It is vulgarly represented that the fore legs of this animal are out of all proportion longer than its hind ones. This is not the case; and the error has arisen from the very great length of the animal's neck and the depth of its withers, by which the fore legs are made to seem longer than the hind ones, though there is scarcely any, if any, difference in length between them.

When young the Giraffe is of a lightish red colour; but, as they advance in years, the male changes to a very dark brown, and the female to a yellowish brown.

The Giraffe which was kept at Windsor, and which scarcely lived two years there, was an extremely fine animal, and increased nearly eighteen inches in stature during that time! Considering what it suffered by change of diet and confinement, we may very reasonably suppose that its dimension: at its death, which we subjoin, fall short of those of its species which grow to maturity in their native clime.

An eagle is said to be able to cleave a man's skull at a single blow. The golden eagle was known among the ancients as the bird of Jupiter.

The sparrowhawk was held in great veneration among the ancient Egyptians. They represented their god Osiris under this form.

Quail-fighting was a favourite diversion among the Athenians.

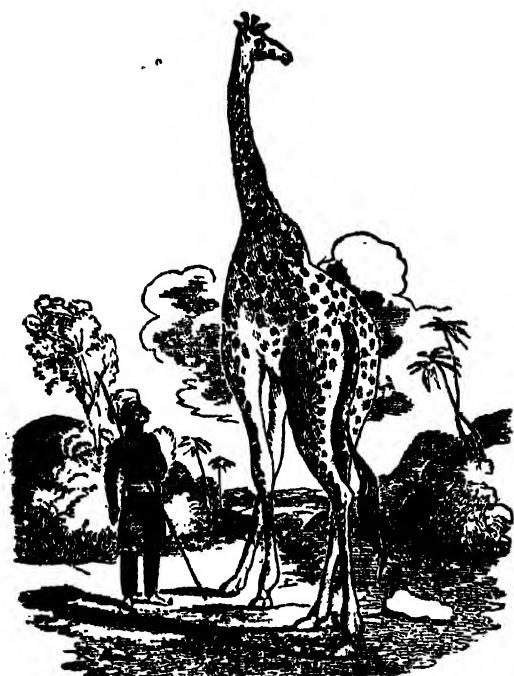
No fish is capable of living so long out of water as the eel. Eels were held in great estimation by the Sybarites.

The pike is remarkable for its longevity and voracity. It will attack any fish smaller than itself.

Pliny informs us that the famous fishponds of Herrius were sold for 33,333L. 6s. 8d., and those of Lucullus at the same price.

DIMENSIONS OF THE GIRAFFE AT WINDSOR.

	FEET. INCHES.
From top of head to bottom of hoof	10 8
Length of head	1 9
From top of head to insertion of neck	4 0
From insertion of neck to elbow	2 3
Elbow to upper part of knee	1 8
Upper part of knee to fetlock joint	1 11
Fetlock joint to bottom of hoof	0 10
Length of back	3 1
From croup to bottom of hoof	5 8
Back to bottom of hoof	2 9
Length of hoof	0 7 <i>1</i>



THE GIRAFFE.

MIRROR OF THE MONTH.

DECEMBER.

No month in the year is more interesting than DECEMBER, though it is subject to many vicissitudes and changes of its atmosphere. At this period of the year NATURE seems to endure a conflict between the energy of maturity and the approaching debility of hoary age, and may afford a simile of that time when the vigour of MAN sinks in the stream of life; and seems to indicate that the waters of oblivion are about to cover him for ever: such, however, will not be his fate. He shall emerge from the stream, and rise with more than renovated strength, when the current shall have run out, and time be merged into eternity.

We rejoice, and make merry in this month, because we have leisure to do so. The opportunity is not lost to commemorate past events; and we associate together with great glee and satisfaction to renew, or confirm, relative affections and friendships; nor do we sink into despon-

dency, while we behold the cold icy fetters binding our parent EARTH in frozen bondage. We know by experience the time of her release, and we anticipate the renewal of blooming youth, and cheerful freedom, when SPRING shall melt her shackles, confirm her liberty, throw over her the green mantle, dappled with daisies, and crown her with buds of promise, and flowers fit for her smiling features. Yet this is not permanent; it was before, and is to come; it is an annual change; it passeth away and returneth, but stayeth not; her bloom ceaseth, her mantle decays; the flowers wither, and again she becomes a victim to the benumbing grasp of PROSERPINE.*

One day in this month is set apart to celebrate the full opening of that bud of hope, which for ages had been in embryo, in the bosoms of inspired men alone, but broke forth at length as the harbinger of a glorious SPRING; a Spring to precede a summer of everlasting liberty; a beatitude of beauty, of perpetual bloom, and of blossoms undecaying. Of that day we shall speak more particularly in due course and rotation, as we observe on all the remarkable days of this interesting month; first premising some general explanations.

All the remarkable days in our CHRISTIAN CALENDAR are such as have been set apart, and ordained by the Catholic Church; and some of them out of superstition alone. It is not, therefore, in a religious sense, that we are called upon to observe them, as a duty we owe to our CREATOR, but rather as being convenient for us in society, and by general consent, admitting the keeping of those days to avoid the confusion and inconveniences that would be experienced by individual, or sectarian caprice in any alteration of them. Even the keeping of the Sabbath on different days is often an impediment to the course of business between JEWS and CHRISTIANS. It was an ultra kind of zeal which induced the Christian world to convert the first day of the week into the seventh; and had no foundation better than a rooted aversion to that people, and the rites of their synagogues. Not that Christians should guard their Sabbath Day less on that account; it is their day of rest, in commemoration of God's work being finished, when he formed the UNIVERSE; and, being so, should also be a day of humiliation and thanksgiving; as indeed every day ought to be, for the good gifts bestowed upon us, and the provision HE has made to supply all our necessities.

These general remarks will demonstrate the spirit with which we take upon us to give the history of noted days, their origin, to what purpose devoted, and the prevalent customs of our forefathers, at those times and seasons, which fall within the month of December. The knowledge of these things is amusing, and cannot fail of communicating pleasure with information. We will begin with the Chronicles of the season, and follow with other important phenomena.

The name of the month DECEMBER was given by JUlius CESAR, meaning the tenth month, as they began their

* PROSERPINE, the daughter of Jupiter and Ceres, wife of Pluto, &c. This Fable is a *Personification* of the *Aura*, which in Autumn begins to destroy the flowers and debilitate the trees. PROSERPINE is therefore said to gather flowers on Earth, and then retire *ad infernum*, or to shades below. They sacrificed to her a barren heifer, the season of the year, winter, cold winds, &c.

+ The persecutions against the JEWS, at various times, for several centuries, evince the truth of this observation, and serve to show how far ignorant zeal may be instrumental to the most cruel barbarity.

reckoning from *March*, and ended with *February*, for which month they could only allow twenty-eight days. **DECEMBER** appears, by the most authentic records we have, to claim nearly the same customs from time immemorial. **SATURNALIA**, or Feasts in honour of **SATURN**, were kept in **DECEMBER**, long before **Romeus** had laid the foundation of the city of **ROME**, in *Italy*. Of these feasts, the learned **MACROBIUS** has written a Treatise, but has not given any information of their origin; the manner of them was, with sacrifice and public worship: the people making merry, and servants being allowed great liberty: even slaves had a sort of temporary manumission given them; and distinctions seemed for a time suspended. Besides this, they made presents, masters to servants, and also friends to one another; no war was to be proclaimed, nor any malefactors put to death during this festival; the schools kept a vacation; and nothing but mirth and freedom was to be met with among the people. All this is still practised, but in a more refined and intelligent manner, among the modern people of all the civilized nations of the **EARTH**. Our Saxon ancestors had the same customs in this month, at what they called *Yule* time, hence it appears, that the customs and ceremonies observed in December are of great antiquity. The following are the most noted in our CALENDAR.

6TH.—ST. NICHOLAS.

St. NICHOLAS was bishop of **MYRA**, in *Lycia*, and is reported to have been of so charitable a disposition that he portioned three young women, who were reduced in circumstances, by secretly conveying money into their father's house. He was formerly considered the protector of virgins, and is now esteemed in Catholic countries, as the *Guardian Saint of MARINEUS*. He is also patron of the company of *Parish Clerks*, in **LONDON**. He died about the year 392. On this day, the scholars of ETON COLLEGE hold a *MONTEN*, in remembrance of St. NICHOLAS. Mr. FOSBROKE, in his "*Economy of Monastic Life*," thus alludes to the "*Boy Bishop*."

" Were it a certain consecrated day
The BISHOP BOY, and his procession small
Of hornbook people, march'd in long array
Decked with the mitre, sandal, staff, and pall,
He scaled the laughing choir's superior stall,
His little train paired off on either side,
Strange was the scene, when they endeavoured all
The chanted mass with discords to divide,
And howled, and yelled, and grinned, and hissed, and
laughed, and cried."

St. NICHOLAS being the reputed *patron* of CHILDREN, it has been common on this day to leave some pretty thing, or some nice eatable in the way, for them to find, imputing the kindness to St. NICHOLAS towards all good children; a very absurd custom, calculated to give them erroneous ideas, and to sow the seeds of superstition in their minds. In the year 1299, EDWARD I., on his way to *Scotland*, permitted one of the *Boy Bishops* to say *VESPERS* before him, in his chapel at *Heton*, near *Newcastle-upon-Tyne*,

" **SATURN**, the God of Time, representing the first age of the world, or that which is denominated the golden age. He was the son of Heaven and Earth. The sacrifices to him were kids, goats, and fruits of the Earth. Previous to sacrificing the animal, they poured wine upon its head, to which OVID thus alludes:—

" Go wanton goat, about thy vineyard browse
On the young shoots, and stop the rising juice.
You'll leave enough to pour between your horns,
When for your sake the hallow'd altar burns."

and made a considerable present to him, and said to the boys that came and sang with him.

8TH.—CONCEPTION OF THE VIRGIN MARY.

This festival was instituted by **ANSELM**, Archbishop of Canterbury, for the safe arrival of the fleet of **WILLIAM THE CONQUEROR**, which had endured a terrible storm at sea; but, an episcopal council held at Oxford, in 1222, decided that it was optional, as to the keeping it, and not obligatory through any canon of the church. **ANSELM** seems to have chosen this day.

13TH.—SAINT LUCY.

A virgin of great sanctity and purity of life. She devoted her days to religion, and lived in celibacy. She gave also her fortune to the poor, that she might not be teased by suitors, and particularly to get rid of one who, being vexed at his disappointment, accused her before **PASCASIUS**, a heathen judge, who, because she was a Christian, put her to cruel tortures, under which she fell a *Martyr*, in the year 305.

16TH.—O SAPIENTIA,

That is, O WISDOM, the beginning of a Latin anthem, that used to be sung in the church from this day until Christmas Eve. It was for the honour of *Our Saviour's Advent*.—(For the article *ADVENT*, see Dec. 1.)

21ST.—SAINT THOMAS, THE APOSTLE.

THOMAS, surnamed **DIDYMUS**, or the *Twin*, was a Jew, probably a Galilean. He is noted only for his unbelief as to the *Resurrection of CHRIST* from the dead. It is said he was killed by the lances of some people who were instigated by the **BIRMINHS**. This day is the shortest to all the regions north of the equator; at **LONDON** it is about 14 hours 44 minutes, and about 7 seconds. On this day, the citizens of **LONDON** choose their officers, common council, &c., of the different wards; and it is, consequently, a day of considerable activity and bustle in the metropolis. This was likewise a day of public interest at **ROME**, where they held a festival in honour of the goddess of Silence and Cheerfulness, who they imagined could cure the disorders of the throat, which frequently prevailed at this season. This day was also sacred to **HERCULES**, the *Theban*, whose twelve labours and exploits are recorded in history, and whose judicious choice of virtue in preference to pleasure, as described by **XENOPHON**, is so well known. He is accounted to have ridden the earth of many monsters.

" At this period of the year mists often prevail very much about the metropolis, which has given rise to the saying of " **DARK DAYS before Christmas**." THOMSON thus reminds us of the season :

" Winter comes to rule the year,
Sullen and sad with all his rising train,
Vapours and clouds and storms.
Now when the cheerless empire of the sky:
To *Cepricorn* the *Centaur* acher yields,
And fierce *Aquarius* stains the inverted year,
Hung o'er the farthest verge of heaven, the **SUN**
Scarce spreads through *ether* the dejected day,
Faint are his gleams, and ineffectual shoot
His straggling rays in horizontal lines
Through the thick air, as clothed in cloudy storm,
Weak, wan, and broad he skirts the southern sky,
And soon descending to the long dark night,
Wide-shading all the prostrate world resigns."

This season seems to require more than ordinary charity towards the poor and destitute. It greatly increases their wants, and by the frequent inclemency of the weather,

adds to their misery. The benevolent heart will, no doubt, commiserate their sufferings, and endeavour to alleviate their misfortunes. THE blessings of HEAVEN await on those who hold out the hand of benevolence and charity towards their afflicted fellow creatures; their deeds are recorded in the registry of everlasting life, and they shall by no means lose their reward.

25TH.—CHRISTMAS DAY.

To CHRISTIANS, this day is truly interesting, and if we look upon it in the light of CHRISTIANITY, it will awaken in us strong sensations of a very serious nature. On this day, we celebrate the birth of CHRIST, the MESSIAH, sent by God to fulfil the PROMISE that had been announced by the PROPHETS, that MAN should be redeemed from the penalty of death for his transgressions; and that light and life should be made manifest by the GOSPEL. Our present condition shows that the promise has been fulfilled: the doctrines of this divine Missionary have lifted up the veil that covered the knowledge of truth, and cast a light that shall spread to all the corners of the WORLD. To profane this day by thoughtless revelry or idle dissipation, must be an odious perversion of our sacred duties, and a total misapplication of our privileges. The strict observance of this day was enjoined by the Catholic church about the year 500 and, with just reason, it continues to be kept holy by all denominations of CHRISTIANS, however they may differ in other matters of faith. The name of the day is derived from *Christi Missi*, or the *Mass of Christ*; and is of Roman original. But while we keep this day in solemn remembrance of our great spiritual delivery, we are not bound to fall in with the superstitions that ignorance has attached to its institution. At the birth of CHRIST there were some singular coincidences: the TEMPLE OF JANUS was shut, peace being established all over the world;* the ORACLE of DELPHI ceased to speak, and was consulted no more. At this time, AUGUSTUS Caesar was Emperor of the ROMANS, and JUDEA was committed to the government of HEROD.

The pastimes and recreations indulged in at this festive season are strikingly like those of the ancient SATURNALIA. The custom of ornamenting our churches and houses with sprigs of evergreen plants is as old as the ANGLO-SAXONS, they having a great veneration for such embellishments, particularly the mistletoe, of which a like regard seems to continue at the present day. It has been supposed that when ALFRED expelled the barbarous DANES, the churches which they had polluted being recovered and purified, green boughs were stuck up in those temples as symbols of consecration and purity; as well as to show the everlasting continuance of the Christian religion, and its never-fading virtues. The rude gambols and mimicry of old times begin to wear away, and are now principally confined to the lower ranks of society. They are, however, still continued in the northern counties; GUISTERS go about fantastically caparisoned, and endeavour to divert the country people, for which they get rewarded with some of the good things that have been abundantly collected for this occasion; Christmas pies, plumpuddings, tarts, custards, and

* The TEMPLE OF JANUS was shut in times of Peace. He is represented with two faces; the one looking backward, the other forward. He is said to have taught the Italians to plant vines, &c. He is by some considered to have been NOAH.

+ The ORACLE of APOLLO was consulted by the GREEKS in all matters of importance. It stood on Mount Parnassus, near the city of DELPHI, which they fancied to be the middle of the WORLD.

other edibles are supplied, and disappear with extreme rapidity. Some feasting and liberality yet continues among the more opulent, and

" The smoking sirloin stretched immense
From side to side in which with desperate knife
They deep incision make, and talk the while:
Of England's glory ne'er to be defaced;
Nor wanting be the brown October drawn
Mature and perfect from his dark retreat
Of thirty years."

THOMSON.

The WAITS, a party of musicians, who go about by night some days before Christmas, as well as the BIADE, SCAVENGERS, &c., never fail to visit the inhabitants of every street for *Christmas boxes*; and those parish worthies present the householders with copies of the Bills of Mortality within the limits of the district so called at LONDON.

It can hardly be necessary to mention the misuse of the gifts and bounties of this frolicsome season, the licentiousness and intemperance of some people being too notorious to pass unobserved. It is no wonder then that the better taste and refinement of this age begin to repudiate all such mischievous fooleries. To give some ideas of the merriments of our ancestors, we present the following extract from original autographs in the British Museum—

" CARDINAL WOLSEY, who was Prime Minister to HENRY VIII. in 1525, established a household for the Princess MARY, she being then the Princess Royal; and he also appointed the various officers and servants of her establishment. The following document is a copy of one presented to WOLSEY, for instructions how to proceed at the succeeding CHRISTMAS:—

" PLEASE IT YOURE GRACE, for the great repaire of straungers, supposed unto the Pyncesse, honourable householde, this solempne fest of Christmas.

" We humbly beseeche the same to let us know youre gracious pleasure concerning as well a ship of silver for the almes disshe requysyte for her high estate and spice plats, as also for trumpets, and a rebek to be sent, and whether we shall appoynte any Lord of Myrule for the said honourable householde, provide for enterluds, dysgysyngs, or pleyes in the sed fest, or for basket or twelf nyght. And in likewise whether the Princess shall sende any newe yeres gifts to the Kinge, the Quene, your Grace, and the Frensshe Quene, & of the value and devise of the same. Besechynge youre Grace also to pardon our busy and importunate suts to the same in suche behalfe made. Thus our right syngler good Lord, we pray the holy Trynyte have you in his holy preservacion. At Teoxbury the xxvij day of November, Youre humble Orators.

John Exon

Jaeler Greville

Peter Burnell

John Salter

G. Bromley

Thomas Audelye."

To the most reverant father in God the
Lord Cardinal, his good Grace.

Doubtless, his Grace the Cardinal allowed the recreations prayed for, and this specimen may serve for a MIRROR of that AGE, as it respects these revels and pastimes then practised. Some singular customs are yet in use, in the Highlands of Scotland, the recital of which may be amusing. On Christmas Day, the first object is to make the *Freckledoun sour*, or sour scones (cakes) the oatmeal for which has been steeped in *soawns bowes*, a fortnight before. These being baked, and distributed among the family, then follow *branded bannocks* and *nam-*

nick perm. New *sowans* are also supplied after having been boiled to the consistence of molasses, being poured into *bicker*s upon the *Lagan le vich*, or yeast bread. The young people then amuse themselves with *swing*, one of them being seated in the swing, calls to another, "Ei mi tu chat," "I'll eat your hail;" to this the other replies, "Cha ni u mu chat," "You shan't eat my hail," and instantly gives a strong push to set the swing going. Those that are prepared for the sport go to the *Kiavamuchd*, or prize-shooting; and others to the *Louchd-vouil*, or striking of the ball: tired with these sports they retire to *Sonsy haggis*, to allay the appetite, and from that to the flowing bowl and sparkling glass, over which the *Sire* relates his exploits in days of *auld langsyne*, with such additions as may serve to make the young ones stare with wonder at deeds they shall never be able to imitate.

26TH.—SAINT STEPHEN

ST. STEPHEN was the first Deacon chosen by the Apostles of JESUS CHRIST. He was arraigned before the *Sanhedrin*, or Jewish Council, for prophesying the destruction of their Temple and City; and while quoting the Old Testament in vindication of his assertions, he was seized by the people, carried violently out of the city, and stoned to death, A.D. 33. This good Christian died praying for his murderers.

27TH.—SAINT JOHN, THE EVANGELIST.

ST. JOHN was the author of the *APOCALYPSE*, or the Book of *REVELATIONS*, in the *New Testament*, written by him while suffering banishment in the *Isle of Patmos*, situated in the Archipelago. After the death of his persecutor, *Domitian*, he returned to *Ephesus*, where he had before resided. There he composed his Gospel, A.D. 96. He died in the reign of *Trjan*, about the year 100. He is supposed to have founded the Churches of *Smyrna*, *Pergamus*, *Thyatira*, *Sardis*, *Philadelphia*, and *Laodicea*.

28TH.—INNOCENTS.

This is often called *Christmas Day*, on account of the Masses said on the occasion of its institution, which was to commemorate the slaughter of the Jewish children by order of *HEROD*, the *Tetrarch*. This festival is very ancient, but the exact time of its establishment is not mentioned in any Chronology.

31ST.—SAINT SYLVESTER.

SAINT SYLVESTER was Bishop of ROME. He succeeded *Miltiades* in 314. He was accounted a pious and benevolent Churchman. He instituted several rites and ceremonies of the Romish Church, as asylums, palliæ mitres, &c. He died A.D. 334.

Having gone through the list of remarkable days in the month of December, so far as regards our *Calendar*, or as the ancient church has appointed, we will now proceed to notice some other occurrences relative to *Lat* events, regarding CHRONOLOGY and BIOGRAPHY.

HISTORICAL AND BIOGRAPHICAL MEMORANDA.

On the first of this month died *Henry I.*, King of England, at St. Dennis, at *Rouen*, in France, in the 67th year of his age, and the thirty-fifth of his reign, leaving his daughter *Matilda* heiress of all his dominions; but *Stephen, Earl of Blois*, son of *Anselm*, the fourth daughter of *WILLIAM THE CONQUEROR*, usurped the throne: this usurpation caused a civil war, which terminated by *Matilda* being adopted by *STEPHEN* as heir apparent to the throne.

On the second of this month, in 1554, *Ferdinand Carrer*, the Spanish general who subdued Mexico, died at a village near *Seville*, in Spain. On this day, in 1790, *Mungo Park* commenced his travels into Africa, to explore the interior regions. In about eighteen months he traversed upwards of 1100 miles, but in a subsequent attempt perished. On this day, in 1804, *BONAPARTE* was crowned Emperor of France by *Pope Pius VII*. In the following year was fought the celebrated battle of *Austerlitz*, between the *French* and the allied armies of *Austria* and *Russia*, in which the French were victorious. *Austerlitz* is a small village, east of *Brinn*, in *Moravia*, in latitude 49 degrees north, and longitude 17 degrees east. On the 3d, in 1809, the *Ionian Islands* submitted to the *British*, and put themselves under their protection. This acquisition of dominion was confirmed by the *Treaty of the Allied Powers* in 1814.

On the 4th, in 1745, the young Pretender entered *Derby*, on his march towards *London*, but was obliged to return and abandon the enterprise.

On the same day in 1792, died *Dg Fordyce*, an eminent Physician. He was a native of *Aberdeen*, and gained great celebrity for medical skill. On this day also, in 1806, the *Victory man of war*, with the remains of *ADMIRAL Lord Nelson*, arrived at *Portsmouth*. The funeral took place in London, the 9th of January. His body was interred at *St. Paul's Cathedral, London*.

On this day, in 1795, died *John Bewick*, a distinguished artist in wood engravings. He was a native of *Avington*, on the *Bank* of the *Tyne*, a few miles from *Newcastle*. In 1808 died, *Dr. William Hawes*, the founder of the *Humane Institution* for the recovery of drowned persons. He was born at *Islington* in 1736.

On the 6th, in 1421, was born *Henry VI.* at *Windsor*, which being the anniversary of *St. Nicholas*, he dedicated King's College, at Cambridge, to that Saint and the Virgin Mary.

In 1670, *Henry Jenkins*, at the amazing age of 169, was interred on this day, at *Bolton*, a few miles from *York*. He was a man of obscure parentage, and for a long time followed the occupation of a fisherman, but at the latter period of his life he remained a humble peasant. Temperance and peace of mind contributed greatly to lengthen his life; a constitution naturally good, and a salubrious air in which he breathed, also tended to protract his dissolution. *COWPER*, the poet, has drawn his character in the following picturesque description:—

"Oh happy! and in my account, denied
That sensibility of pain with which
Refinement is endued; thrice happy thou.
Thy frame robust and hardy, feels indeed
The piercing cold, but feels it unimpair'd;
The learned finger never need explore
Thy vigorous pulse: e'en the unhealthful st,
That breathes the spleen, and searches ev'ry bone
Of the infirm, is wholesome air to thee.
Come hither, ye that press your beds of down
And sleep not; see him sweating o'er his bread
Before he eats it. 'Tis the primal cure
Bit soften'd into mercy; made the pledge
Of cheerful days, and nights without a groan."

COWPER.

Jenkins, according to the best accounts of him, lived a quiet unreflecting life, more of the animal than the intellectual man.

On the 7th, B.C. 43, *Cicero*, the great Roman orator and philosopher, was murdered, near his villa, in Italy. The enormity of this assassination was much increased by

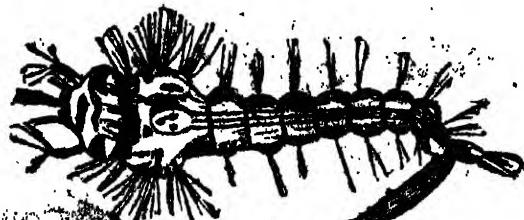
the circumstance of being perpetrated by POPILIUS, a man for whom CICERO formerly pleaded; and also for the cruel manner in which it was done, by cutting off his hands and head. This eminent Roman is still considered as a model of eloquence and classical style among the learned.

On this day in 1664, was beheaded on Tower-Hill, the celebrated ~~and~~ ^{but} LIEUTENANT-SYDNEY. He was a great patriot and an eminent politician. His principles were highly appreciated, and his writings are held in great repute. He died with much heroism, and left a lasting impression of admiration and respect on the minds of all who witnessed his execution.

"The boldest son of public weal
See SYDNEY leaning g'er the block! his mien,
His voice, his hand, unshaken, clear, serene;
Unconquer'd patriot! form'd by ancient lore
The love of ancient freedom to restore,
Who nobly acted what he boldly wrote
And seal'd by death, the lessons that he taught."

The charge against SYDNEY was founded on the Rye-House plot, in the reign of CHARLES II., for the particulars of which our readers are referred to the History of England.

OF GNATS.

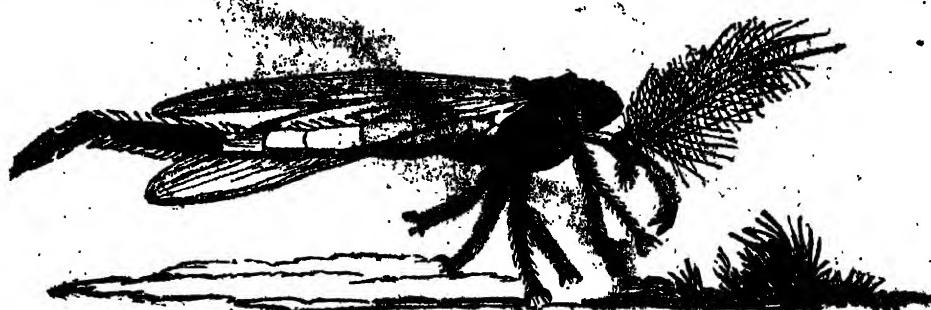


GNAT IN ITS AQUATIC STATE.

Of all living creatures yet known those produced in fluids are among the most curious; of these there are many kinds. Some appear to be really fish, and are natural inhabitants of the water all their lives; others live there but occasionally, in the manner of GNATS, which from eggs dropped by their parents in the water, become swimming animals;

but, after a time, shed their skins, appear in a form that bears no resemblance to what they were before, take wing, and become creatures of the air.

The manner in which the GNAT lays its eggs is very curious; after having laid a proper number upon the surface of the water, it surrounds them with a kind of glue, which keeps them from sinking; but, at the same time, fastens them with a thread to the bottom, so preventing their being driven away by the wind, from a place proper for their production, to another that would destroy them. Thus the insects, in their egg state, resemble a buoy, which is fixed by an anchor. As they come to maturity, they sink deeper, and at last, when they leave their eggs as worms, they creep at the bottom, where they make themselves lodgements in a kind of cement. They are always produced in stagnant pools, but never in a stream. Before they turn to flying insects, they have been aquatic animals under two different forms. The worm-like form of these creatures may be observed in stagnant waters from the beginning of May till Winter, as small grubs, with their head downwards, their hinder parts on the surface of the water; from which part arises sideways a kind of vent-hole, or small hollow tube or funnel, which is the organ of respiration. The head is armed with hooks that serve to seize on insects, or on small pieces of grass, on which it feeds. On the sides are four small fins, by which the insect swims about, and dives to the bottom. After remaining about three weeks in a reptile situation, they become transformed into a nymph-like state, or chrysalized, which is, rolled up into a spiral form. When they are in the form of chrysalids, they are constantly on the water to draw breath, during which they abstain from eating, but upon the least motion unroll and plunge to the bottom, by small paddles at their hinder parts. After about four days fasting they pass to the state of GNATS. A moment before water was its element; but now, being become an aerial insect, it can no longer live in water. The trunk of this little insect is placed under its throat, and is a long scaly sheath, which incloses several stings, that are darted into any body they may wish to penetrate, and serve as conductors for the blood, or juice; and, when examined through a microscope, the points are so fine as scarcely to



GNAT IN ITS AERIAL STATE.

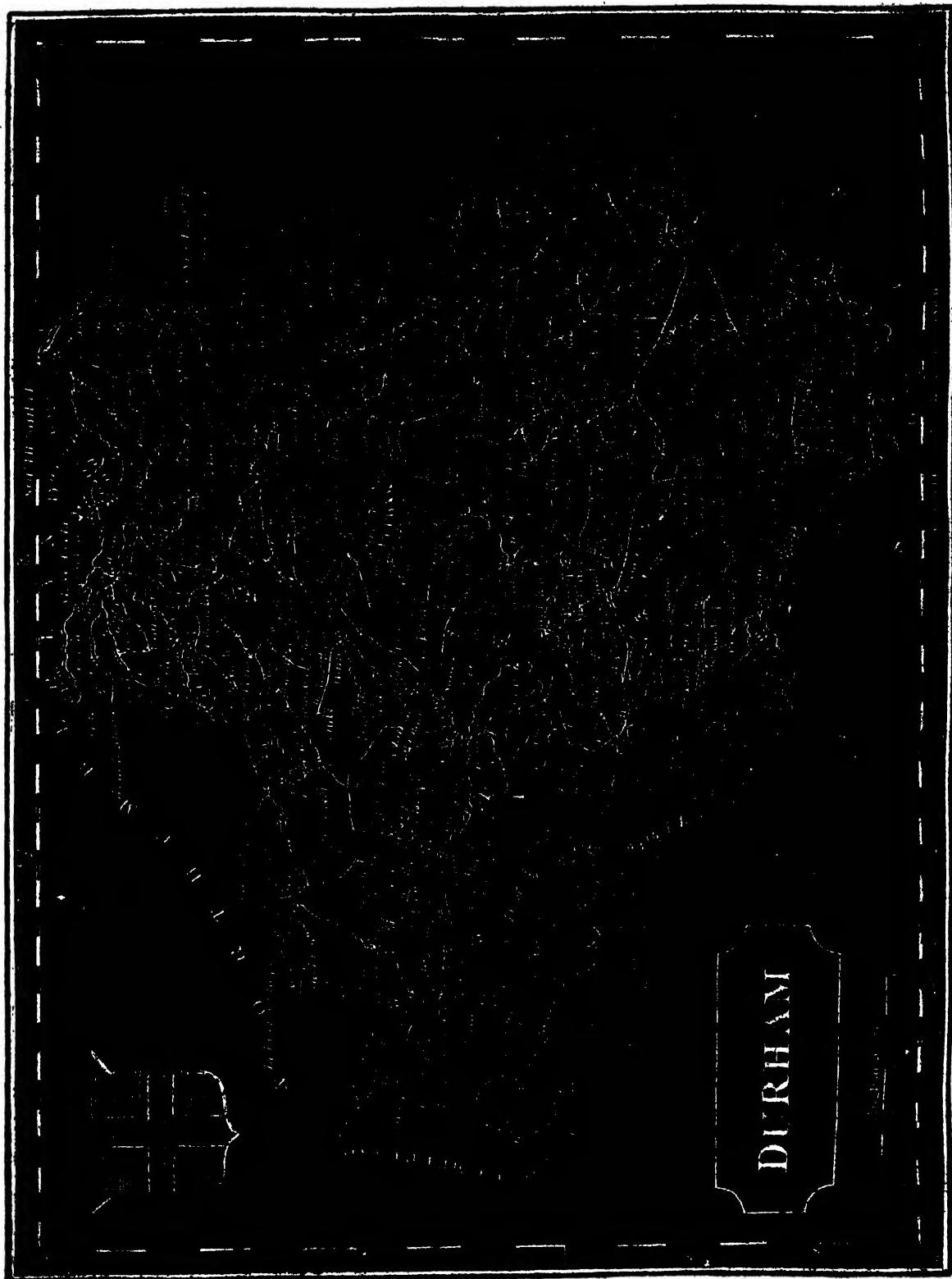
be discerned. The head of the GNAT is adorned with a plume of feathers; and the whole body appears to be invested with scales and hair, which prevent it from being injured. Though the GNATS of Europe are capable of producing great irritation, they are harmless when compared to those of America and the East, where the natives are under the necessity of anointing their bodies with oil, to prevent them from being absolutely tortured by their sting.

From the above it will be observed, that GNATS in their first state are like worms, and are inhabitants of the water; in their second state, they change from aquatic to amphibious creatures, living both in the air and water; and lastly, they confine themselves entirely to the air.

No. XXVIII.]

GUIDE TO KNOWLEDGE.

POLYGRAPH
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DURHAM.

The county of DURHAM is in form a triangle. According to the earliest account Durham formed part of the country inhabited by the BRIGANTES; and during the SAXON HEPTARCHY it formed part of the kingdom of the NORTHUMBERS.

It is bounded on the east by the German Ocean, on the west by Westmorland and Cumberland, and on the south by the river Tees, which divides it from Yorkshire. It is about forty-five miles in length, thirty-five in breadth, and 107 in circumference.

That part of the county which borders on Cumberland consists chiefly of naked hills and barren moors, but possessed of very rich and numerous mines, particularly of *Lead*. The eastern and more central parts have an excellent soil, and, for the most part, a level aspect. Though nearly all kinds of agricultural produce are raised here in abundance and perfection, the chief attention of the Durham farmers is directed to the breeding of cattle. The Durham oxen, which are of uncommon size, are in very great demand in the southern counties, as also are its sheep, of which there are two distinct breeds, the *long* woolled, and the *short* woolled. It is watered by the rivers *Derwent*, *Wear*, and *Tees*, with some other streams of less note.

The most important town of this county is its capital DURHAM which is most picturesquely situated upon the *Wear*. Some part of this city is very ancient, but much of it has been erected within the last century and a half. Though like all cities to which additions have been made from time to time, it is very irregularly built; yet, from its peculiarity of situation, upon the craggy rocks of the river, and surrounded by woods, *Durham* has a very handsome appearance. To this the general elegance and neatness of its buildings greatly contribute. Its cathedral is particularly magnificent. Some woollen goods are manufactured at DURHAM to a considerable extent; but its chief source of profit is *Mustard*, which is grown in its vicinity in great abundance, and of a very superior quality. In the neighbourhood of this city, in 1346, was fought a tremendous battle between the English army and that of Scotland, when the latter was utterly defeated, and their king, DAVID BRUCE, was made prisoner. This action is commemorated by a stone monument, called *Neville's Cross*, which is still standing in the vicinity of the city. Ten miles from *Durham*, and like it pleasantly and picturesquely situated on the *Wear*, is *Bishop Auckland*, near which the Bishop of Durham has a very fine palace and park. In addition to that advantage, this town is greatly benefited by its manufactures of cotton goods; and is at once a neat, pleasant, and prosperous place.

Chester-le-street, on the *Wear*, South Shields, at the mouth of the *Tyne*, Sunderland, Bishop Wearmouth, and Stockton-upon-Tees, are all particularly fine and flourishing towns, which owe their prosperity to commerce. *Shields* and *Sunderland* are chiefly engaged in the coal trade, but the others have manufactures of various kinds.

But the chief manufacturing town of this county is *Darlington*, where a particular kind of linen, called *Huckabuck*, is made in the greatest perfection. Woollen stuffs and camlets are also made at this town; and as the wool used here is bought of the farmer in the immediate neighbourhood, and the manufactures sent direct to the

London dealers, a very great profit is made by the people of *Darlington*.

CHIEF TOWNS—POPULATION, 1831.

DURHAM	10,125	Bishop Wearmouth	14,462
Chester-le-street	15,373	Stockton-upon-Tees	7,991
Sunderland	17,060	Darlington	8,87
South Shields	9,074	Bishop Auckland	2,856

EXPLANATION OF THE MAP.

Reference to the Hundreds.	Reference to the Boroughs.
1	Darlington
2	Chester
3	Easington
4	Stockton
	Durham
	Gateshead
	South Shields
	Sunderland

Boundaries of Counties thus	-----
Divisions of Counties	thus -----
Hundreds	thus -----
Boroughs	thus -----

CHESHIRE.

This county has two hornlike projections to the east and west of its northern border, which measure sixty miles across, but its main land does not exceed forty miles in length, and is about thirty in breadth.

The greater part of its northern side is bounded by the *Mersey* and *Tame*, and the remainder of that side by Lancashire; on the east, by the counties of Derby and Stafford; on the south, by Shropshire; and on the west, by Flintshire and the *Irish Sea*, which separates it from Ireland.

The greater portion of this county is very level, but towards the eastern extremity there are several hills, which form a continuation of those of Staffordshire and Derbyshire. Though the land is so flat it is almost uniformly good; for, making allowance for the hills of which we have spoken, there is not in the entire county above one acre of waste in twelve; which, whether with reference to the whole of England, or to almost every selected county, is an extremely small proportion of waste. This county is still farther favoured in being well and picturesquely watered. The rivers *Mersey*, *Dee*, *Waver*, *Dove*, and *Wenlock*, all water it; and, in addition to these, it is fertilized and beautified by almost innumerable lakes and rivulets. One valuable commodity of this county is *salt*, which is exported in vast quantities. The chief places noted for their salt works are called the three witches; viz., *Northwich*, *Nantwich*, and *Middlewich*; but, there are many other, though less considerable, salt-works in this county. But the grand source of wealth to the Cheshire farmers is *sheep*. The land is peculiarly fit for pasture, and accordingly full three-fourths of the land adapted for cultivation are appropriated for that purpose. Almost the only exceptions to this mode of employing the land in Cheshire are those parts in which the soil is either very light sand, or tolerably light loam. In the former kind of soil *carrots*, and in the latter kind, *potatoes*, are the chief articles of production. In some of the more sterile parts *coals* are abundantly found, and serve, not only for the use of the inhabitants, but also to a considerable extent for exportation.

Its chief town is CHESTER, which, though only of a small size, is a very ancient and a very wealthy city. Formerly, it was one of the strongest and most important

garrisons in England; and its walls are still kept up, though they only serve for a promenade for the inhabitants. As a port it is very inconsiderable, and its only manufacture of any consequence is that of gloves. But it seems as a kind of capital for the gentry of the surrounding parts of Wales, and is consequently possessed of a very considerable domestic trade.

Its other chief towns are Stockport, Macclesfield, Cheadle, and Knutsford, and they have nothing worthy of any particular mention, excepting that they and their suburbs maintain a very considerable population, who are busily engaged, like the inhabitants of Manchester, in the cotton manufacture.

On the mouth of the *Dee*, in this county, there is a village called Parkgate. Formerly, this place was fast rising into opulence, and extending itself in size, from the influx of persons embarking for, or landing from, Ireland. But Holyhead has proved a too successful rival to it; and this village having now scarcely any profit except that which it derives from the few people who resort to it as a bathing-place, it is gradually sinking into its native insignificance.

Of this county were the celebrated historians HOLLINGSHED and SPEED.

During the time the ROMANS were in Britain, this county, together with Shropshire, Staffordshire, and Worcestershire, was inhabited by the CORNAVII.

Under the SAXONS, it formed part of the kingdom of MERCIA; by the DANES it was made an earldom; and, lastly, by WILLIAM THE CONQUEROR, it was erected into a county PALATINE, enjoying under the crown all the rights of sovereignty; the EARLS OF CHESTER holding parliaments and courts of justice by their patent. These extensive privileges seem to have been granted with the view of encouraging and enabling them to make a firmer stand against their neighbours, the WELSH. HENRY VIII. retrenched the power of this grant; it still, however, retains authority to determine, by its own judges, in all cases, except high treason.

CHIEF TOWNS—POPULATION, 1831

CHESTER	21,363	Knutsford	2,823
Stockport	25,469	Nantwich	4,886
Macclesfield	20,129	Northwich	7,481
Congleton	9,352	Middlewich	1,325

The ancient Romans called elephants "Lucas boves," Lucanian oxen, because they first saw them in Lucania in Italy, during the war with Pyrrhus.

A dog at sea is always sensible when land is near. Dogs were anciently sacrificed to Hecate.

A horse breathes through his nostrils, and not through his mouth. The Greeks sacrificed horses to the sun.

Cows were anciently consecrated to Ceres, because they were supposed to have been the first animal eaten by man.

A camel has been known to carry 1,200 pounds weight. By means of the camel, the trade of Turkey, Egypt, Persia, Armenia, and Barbary, is principally carried on.

The Sun, the common centre of the planetary system, is 863,246 miles in diameter.

Fire is a fluid, and the chief agent in nature.

To have torches, or fire, carried before them, was an honour peculiar to the Roman emperors.

Lightning is the explosion of electric matter in the clouds.

Thunder is the report with its echoes.

Thunder bears the same relation to lightning, as the report to the flash of a cannon.

Among the ancient Greeks, all persons killed by lightning were buried apart, they being thought hateful to their gods.

THE HEATHEN MYTHOLOGY.

SECTION I.

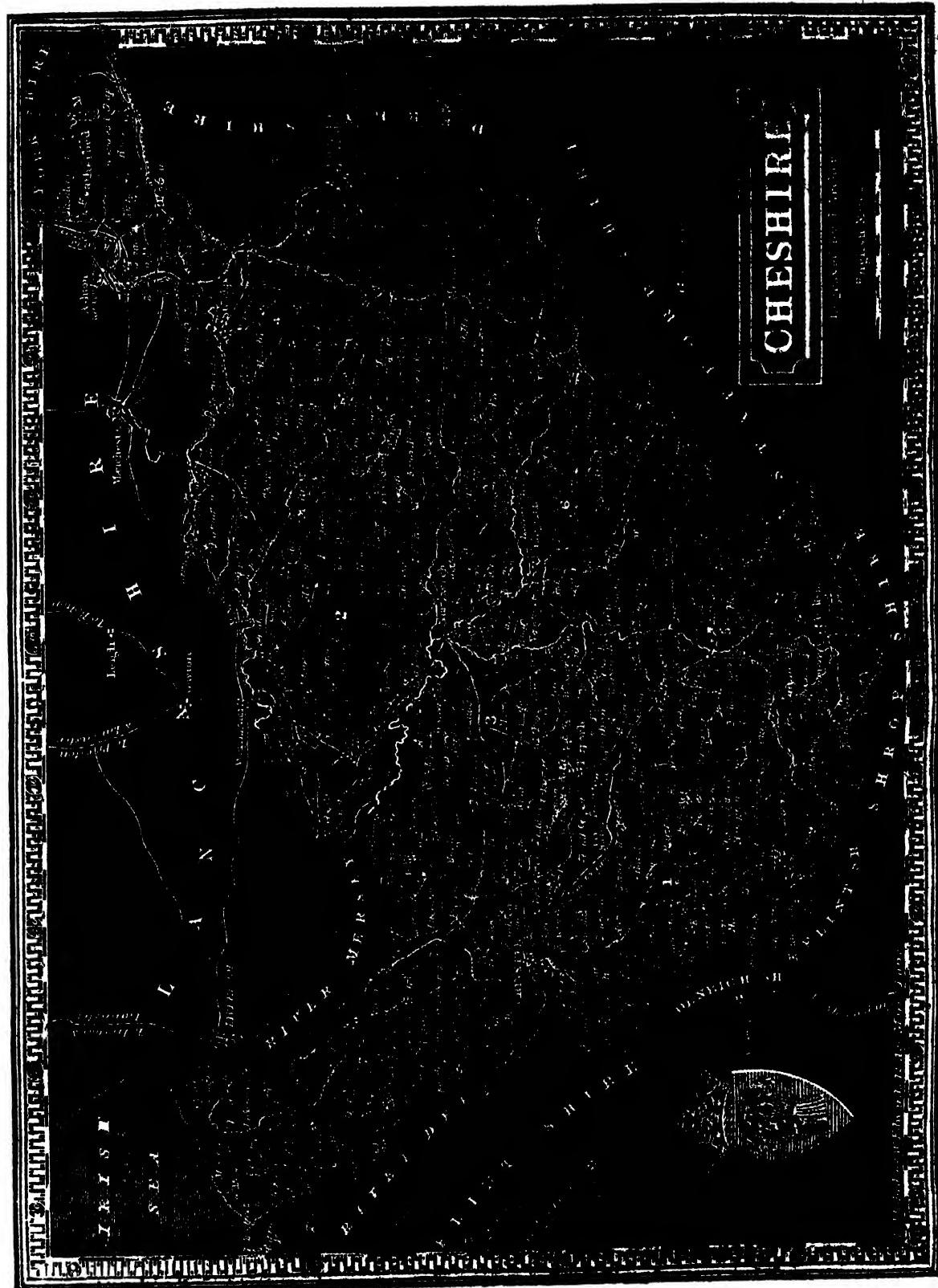
Though the heathen mythology abounds with gross errors, and though much of it originated in the grossest ignorance on the one part, and was received with the most perfect credulity on the other; yet it is so interwoven with the histories of past times, and of great people who now exist only in history, and has been so abundantly used by the great, sublime, and beautiful poets of antiquity, that it is impossible to read either the history or the poetry of the ancients with any considerable degree of advantage, without possessing some knowledge of mythology from which they have so largely borrowed. We cannot believe one syllable of the story of the gods and goddesses taking a part in the quarrels between the Greeks and Trojans; because we know very well that no such gods and goddesses ever had, or could have, any other than an imaginary existence. But, if we would read Homer with advantage, we must know what was fabled of those gods and goddesses. We know that their actions were fabled; but, if we wish to read the Iliad, or any other of the Greek or Latin classics, with profit and pleasure combined, we must know what those actions were fabled to be; and what attributes, station, and relative power were peculiarly assigned to the respective deities. This knowledge, for the reasons already assigned, is absolutely necessary to a classical reader; and it is on that account that we intend to give a sketch of the Heathen Mythology. We shall make it as full as our limits will permit us; but it will necessarily be confined to a sketch.

The Heathen Mythology treats of the history of the fabulous gods and goddesses; but more especially of those of Greece and Rome. This arises, probably, in part from Greece having derived much of her mythology from the Egyptians, and the Romans from the Greeks; and partly, perhaps, from those being the only ancient nations* with whose literature we are at all intimately acquainted.

The Mythology was firmly believed among the uninformed mass of the community both in Greece and in Rome; though the educated and philosophical few had just ideas of the one true God†. But all those attributes which the philosophers justly ascribed to the one Almighty God, the creator, preserver, and ruler of the world, were separately ascribed by the popular Mythology to as many deities. In addition to the numerous gods thus called into an imaginary existence the Greeks, and still more their conquerors and disciples the Romans, created a deity for various purely humane affairs, such as love, war, marriage, hospitality, &c.; and even gave to the very Cloacae a tutelar divinity. Those mortals, too, who in their lives were singularly eminent, were deified after their deaths; and thus a Mythology was formed so comprehensive and so complex, that the mere catalogue of deities, without any explanation of their various attributes and dispositions, must have been a considerable task upon the memories of their superstitious worshippers. The young reader, having his mind duly imbued with Christian knowledge, will not

* The Jews are of course excepted: we have a full account of them in Holy Writ.

† Why the philosophical heathen did not communicate their ideas of the Deity to the whole multitude we have shown in speaking of the "Eleusinian Mysteries."



I

fail to perceive amid all the errors and fictions of the Heathen Mythology, that many of its personifications and fables are obviously founded upon truths, which all nations had dimly received by tradition from their common parents, the sons of Noah and their wives. This will be particularly perceptible on comparing our next paragraph with the second verse of the first chapter of Genesis.

The oldest of the deities were Chaos, and his consort DARKNESS; whose origin, as we have observed above, is clearly to be traced to the traditional though faint idea which the heathens had of the real Cosmogony.

Celus or Etrurius, and his consort Tellus, or Titaea, were the first parents of the gods; their children, called the Titans, had each one hundred hands and half that number of heads. The principal among these many-headed and many-limbed beings were the following, viz.: Briareus, Hyperion, Oceanus, Japetus, Cottus, Creus, Cœsus, Gyses, and Saturn. This last was the most celebrated of them all. By his wife Rhea, Ops or Cybele, he had the gods Jupiter, Neptune, and Pluto; and the goddesses Ceres and Juno. Saturn reigned in Crete, and his power was so great, and was also so wisely and benevolently exerted, that during his reign the gods were able to dwell among mankind without being disgusted with the sight of folly or wickedness; and while men remained thus virtuous, wise, and peaceful, the gods caused the earth to produce spontaneously all things necessary for man's subsistence and enjoyment.* The duration of Saturn's reign is called the GOLDEN age, as having been the period during which man enjoyed the greatest amount of happiness attainable by humanity.

This glorious and benevolent reign was at length terminated by the rebellion of Saturn's eldest son Jupiter. After vainly struggling to maintain his power at Crete against the assaults of his undutiful and rebellious son, Saturn was at length obliged to save his life by a precipitate flight; and he was kindly received at the court of Janus, in Italy, to whose subjects he, in return, communicated the valuable knowledge of agriculture. It is on account of this instruction that Saturn is represented with a scythe in his hand, in the Roman Mythology. Janus himself was deified at his death, as well as his guest, on account of the great wisdom and justice with which he had reigned, and the success with which he had laboured to soften the manners and improve the minds of his subjects.

Jupiter having dethroned and banished his father seated himself upon his throne, and resided i.. Olympus. Hence he issued his commands alike to mankind and to the deities; hurling resistless and destroying thunders upon those who dared to dispute his will. Notwithstanding the known greatness of Jupiter's power, the gods and goddesses ventured to endeavour to dethrone him. But the omnipotent thunders of Jupiter speedily brought the rebellious deities to their senses, and induced them quietly and gladly to submit to one who had evidently determined to be obeyed, and who had the power to carry his determination into effect. Subsequently the giants also rebelled against him, and piled the very mountains upon each other, in order to make their way up to Olympus. Their rebellion was as useless as that of the deities, and terminated even more fatally. For Jupiter, enraged that mere mortals also should venture to assail him and dare

his vengeance, scattered them with his thunder, and armed his son Hercules with power to destroy them, which that celebrated hero effectually performed. Jupiter was the supreme master of all things, save only when the Fates, or Fatae, Clotho, Atropos, and Lachesis, who presided over the lives of mankind, had already determined what the fate of any individual should be. Thus Homer describes Jupiter as being anxious to spare Patroclus from being slain, yet unable to interfere in his behalf, on account of the Fates having already determined what should be his destiny.

Neptune, the brother of Jupiter, was god of the sea, and had it and all its inferior deities in subjection to him.

Apollo, son of Jupiter by Latona, and twin brother of the goddess Diana, was the god of poetry, music, and medicine. He was also supposed to preside over the arts and over archery and archers. He has been erroneously supposed to be the same as the sun, but the best classic works now extant militate against that idea, which indeed seems to have wholly originated in his being pictorially represented with rays around his head.

Mars, son of Jupiter by the goddess Juno, was the god, as his sister Bellona was the goddess, of war. At Rome especially he was worshipped with very great solemnity and respect. His temple was much frequented, and very costly presents were made to him, or more properly speaking to his priests the Salii. These priests had the guardianship of the aeneiæ, or sacred shields, which were represented to have fallen from Heaven in the time of Romulus. They were of brass, and as great importance was attached to their remaining in the possession of the Romans, a number of shields similarly shaped and made of the same material were hung up in the temple with them, that the genuine ones might be indistinguishable to any hostile stranger who should endeavour to steal them.

Mercury was the son of Jupiter by Mainthe, the daughter of Atlas. He was made the messenger of Olympus, and was furnished with wings to his feet, a winged hat, and a caduceus. He was accounted to be the god of eloquence, letters, and, by a very singular junction, of thieves.

Vulcan was the son of Jupiter by the goddess Juno. He was the god of fire and the tutelar deity of those who worked in metal. He made armour and utensils for the deities, and furnished Jupiter with thunder-bolts. Having offended Jupiter, he was thrown violently down from Olympus, and in the fall injured himself so severely that he ever afterwards limped so ludicrously as to excite the jests and ridicule of the other deities.

Juno, the daughter of Saturn, and sister as well as wife of Jupiter, was queen of Olympus, and mother of several of the deities. She was the tutelar deity of marriage and parturition. She was exceedingly majestic and haughty in her gait and manners; perpetually jealous of her husband Jupiter, and implacably cruel to those whom she suspected of causing him to be unfaithful to her.

Minerva was the goddess of wisdom and the tutelar divinity of Athens, where an exceedingly splendid temple was erected in honour of her. A curious origin is assigned to her by the poets. Jupiter is said to have been so distracted with a violent pain in the head that he ordered Vulcan to strike him with his hammer. The god of smiths did as he was desired, and from the wound which his massive implement made in the head of the sovereign deity of Olympus, forth sprung Minerva, armed and equipped in splendid and complete armour.

Venus, the tutelar deity of beauty and love, was ex-

* Here consult Genesis, chap. 2; and the traditional, though perverted knowledge of the ancients will again very obviously appear.

ceedingly beautiful. Her character is very variously drawn by various poets, some describing her as chaste and virtuous as she was beautiful, and others representing her as the very contrary. By some she is said to have been a daughter of Saturn, and consequently a sister of Jupiter; by others she is said to have been a daughter of Jupiter by the nymph Dione; while others represent her as having sprung up in full possession of grace and beauty from the foam of the sea. She was represented as usually residing in Cytherea or Cyprus, and as riding in a chariot drawn by doves, and perpetually accompanied by the graces, and Hymen, the tutelar deity of marriage. Cupid, the god of love, whose darts were represented to be unerring in their direction and irresistible in their effects, is described as being a naked and beautiful boy, having his eyes bandaged, and constantly carrying a bow and arrows about him: He is said to have wounded indiscriminately and with equal effect gods and men.

Ceres was a daughter of Ceres and mother of Proserpine, whom Pluto, the grim and ugly deity of Tartarus, stole from earth and made his queen. Sicily was the favourite island of Ceres, who taught mankind to sow corn, make bread, and plant fruit-trees.

Latona, the mother of Apollo by Jupiter, was the daughter of Saturn.

Vesta was the goddess of fire, and was held in exceedingly great reverence at Rome. In her temple a fire was kept perpetually burning, as an offering upon the altar. Great stress being laid upon the perpetuity of this igneous offering, virgins (called the Vestal Virgins), were appointed, after a severe novitiate, to attend to it in turn. If the fire by any chance was suffered to go out great calamities were supposed to impend over the imperial city, and the unfortunate priestess during whose watch it expired was severely whipped by the priest of the goddess. On such occasions the fire was only allowed to be rekindled with the sun's rays. These priestesses made a vow of virginity, and if any one of them violated it, she was inexorably put to death, in order to deprecate the wrath of the goddess.

Diana was daughter of Jupiter, by Latona, and twin sister of Apollo. She is represented as having been exceedingly tall, majestic, and beautiful. She was the goddess of hunting, and spent the principal part of her time in partaking of that amusement in the woods. On these excursions she was attended by a long train of nymphs, who were all of a majestic height and great beauty, but not so tall by a head as the goddess herself, and very far inferior to her in charms and gracefulness. She was worshipped with the most magnificence and respect by the Ephesians, who erected a splendid temple to her honour in their city.* She is generally represented with her legs naked but with bucklers on her feet, and carrying a bow and a quiver full of arrows. She was exceedingly swift of foot and expert in archery.

Bacchus, the god of wine, was the son of Jupiter by Semele, a mortal. He may be said to have had temples wherever there were drunkards, as far as relates to his character of god of wine. The festivals instituted to his honour in that character were literally noisy and intemperate orgies, where riot, debauchery, and every kind of excess and obscenity were permitted and practised. But some writers give Bacchus a very different character, and ascribe to him many actions and qualities so similar to those which we know to be properly ascribed to Moses, that very many

learned men, and those too of the very highest literary rank, have thought it probable, that when thus represented Bacchus is in point of fact merely an imaginary personification of the spirit of dissipation and leader of the Israelites.



A learned and bearded looking personage, sitting

with a bunch of grapes in his hand.

As it is a transparent, elastic fluid, with which the surface of the earth is every where covered, it is about eight hundred times lighter than water, and is absolutely necessary to the existence of animal life.

When air is in motion it constitutes wind.

A gentle, pleasant wind, moves about four or five miles an hour; a brisk wind about fifteen miles an hour; a high wind, or fresh gale, thirty or thirty-five miles an hour; a very high wind, or strong gale, forty-five miles an hour; a storm, or tempest, fifty miles an hour; a violent tempest sixty miles an hour; a hurricane, eighty miles an hour. When the wind flies at the rate of ninety or one hundred miles an hour, it is called a violent hurricane, tearing up trees and every thing which it meets.

NOTICE.

We beg particularly to call the attention of our Readers to the MAPS given in this work, and especially to those which will appear in our Number of December 28; viz., three successive MAPS of LONDON.

1. MAP of LONDON, in the time of the ROMANS;
2. MAP of LONDON, as it was in the time of QUEEN ELIZABETH; and
3. MAP of LONDON, as it exists NOW; together with a Brief HISTORY of LONDON, from its origin to the present time; the whole of which will be contained in a double Number, without any additional charge: and with confidence do we say that the whole History of the World does not afford an instance of any work so embellished and illustrated, at such a small expense to the Purchasers. In order to possess a whole series of the Numbers of this Work, Subscribers will be pleased to obtain those already published, as speedily as possible, before they are all disposed of, as there are but few remaining.

To prevent disappointment in procuring the Number containing the three MAPS of LONDON, Subscribers are requested to give special orders to their Booksellers as early as possible, that a sufficient number may be struck off, and no disappointment occur.

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* St. Paul speaks of the Diana of the Ephesians

No. XXIX.]

GUIDE TO KNOWLEDGE.

[PRICE
ONE PENNY.]

PORTUGAL.

THE HISTORY OF PORTUGAL.
BY JAMES HARRIS.
LONDON: T. C. & E. C. THOMAS, 1850.
MURKIN'S PAPER.
Price One Penny.
The History of Portugal, from the earliest period to the present time, is a work of great interest and importance. It is written in a clear and concise style, and is well illustrated with maps and other diagrams. The author has made use of the best authorities available, and has given a full account of the political, social, and economic history of the country. The book is well bound, and is suitable for both general and special readers.

PORTUGAL.

PORTUGAL, formerly a part of Spain, is the most westerly kingdom of Europe; and, like Spain, is very mountainous, and also bears a great resemblance in its rugged aspect. Many portions are rugged and sterile; but the valleys, in general, are very fertile. The soil of Portugal is not very productive either in corn or pasture; but there is a great abundance of oranges, lemons, figs, raisins, almonds, nuts, and olives: together with mines of iron, tin, lead, and marble. The principal production of this country is wine, known by the name of Port, of which vast quantities are exported. This wine is so named from the city of Oporto. Portugal is particularly noted for the cork-tree, the orange, lemon, and olive trees. Its climate is very delightful, especially on the coast, and the high grounds; but in the valleys, in summer, the heat is excessive.

This country, like Spain, was successively in the possession of the *Carthaginians*, *Romans*, *Goths*, and *Moors*, until the year 1098, when ALPHONSO VI., king of *Leon* and *Castile*, conquered the northern provinces of PORTUGAL from the Moors; and, to reward the signal services of HENRY, the youngest son of Robert, *Duke of Burgundy*, against the infidels, he constituted him *Earl of Portugal*. In 1139, ALPHONSO, the son of HENRY, having freed himself from the subjection of the King of Castile, and conquered the southern provinces of Portugal, as far as the *Mountains of Algarve*, was proclaimed by his army, King of Portugal. His successors continued the war against the Moors, till they were masters of the whole country. The crown continued in this family till 1580, when PHILIP II. of Spain, reunited it to his kingdom. In 1640, the Portuguese rendered themselves quite independent of the Spanish crown, and placed the *Duke of Burgundy* on the throne. In 1807, in consequence of the French invading PORTUGAL, the whole of the royal family embarked in a fleet in the *Tagus*, and on Dec. 1st, sailed for BRAZIL, escorted by four British men-of-war. A Regency was previously appointed; but no attempt was made to resist the FRENCH, who soon after entered the capital. In 1808, an army was sent from ENGLAND, to aid the PORTUGUESE, and the FRENCH were defeated on the 21st of August, at *Vimiera*. This battle was followed up by a *Convention*, usually called "*The Convention of Cintra*," in consequence of which, all the French forces were sent by sea to their own country. The French again entered Portugal, but after successive defeats, by the *British and Portuguese troops*, they were completely expelled from that country.

The government is an hereditary monarchy, and the rightful heir to the crown is DONNA MARIA; but the sovereign power having been usurped by DON MIGUEL, the Royalists, under the command of DON PEDRO, are endeavouring to dethrone him; and the great struggle of contention is carrying on at Oporto; and hitherto, the strife has been in favour of DON PEDRO. (*See the Map.*)

This country was formerly greatly distinguished as a maritime power, but its prosperity has long since declined. Its chief rivers are the *Tagus* and *Douro*; the former flows by LISBON, the latter by Oporto.

The following are the chief towns of Portugal, together with their population:

Lisbon	.	.	.	.	240,000
Oporto	.	.	.	.	70,000
Braga	.	.	.	.	18,000
Elvas	.	.	.	.	16,000
St. Ubes	.	.	.	.	12,000
Coimbra	.	.	.	.	12,000

LISBON, the capital, is finely situated on the north side of the mouth of the *Tagus*. It is built in the form of an amphitheatre, on seven hills. The harbour is very capacious, and will contain 1000 ships with the greatest safety. Its entrance is defended by two forts. The city is also protected by the fort of *Holyrood*, and a *citadel*; and water is conveyed to it by a grand aqueduct. The greatest part of Lisbon was destroyed by a dreadful earthquake in 1775; but it has been rebuilt. The number of inhabitants who suffered on that occasion was about 60,000. The Parliament of Great Britain, on receiving intelligence of this event, immediately voted 100,000*l.* for the relief of the distressed people of Lisbon.

ST. UBEA is noted for salt; COIMBRA for its university, fine cathedral, and a curious bridge built by the *Romans*; OPORTO for wine; ELVAS for its castle, and a cistern, so large, that it will hold water sufficient to supply the town for six months; LISBON, next to London and AMSTERDAM, is considered the greatest commercial town in Europe. In religion, language, and manners, the Portuguese strongly resemble the Spaniards. The population of Portugal is about 3,700,000.

The climate of Portugal being of a mild and agreeable temperature, it was formerly much resorted to from England for the recovery of health.

The Portuguese are in general superstitious, indolent, and haughty. Its peasants are in a state of vassalage:—temperate and lively, but generally very ignorant, and very backward in all improvements. Their agriculture is wretched, and their manufactures are greatly neglected. The commerce of Portugal, however, is very considerable, especially in the productions of her colonies. The wealth and power of Portugal are small.

It will be remembered, that when DON PEDRO left PORTUGAL in 1826, and became Emperor of Brazil, that he resigned the throne of Portugal to his daughter, but which having been usurped by his brother DON MIGUEL, is the cause of the present contest at Oporto; hence the future character of the government is at present uncertain.

NETHERLANDS, PAIS-BAS, OR LOW-COUNTRIES.

THESE provinces obtained the general name of *Netherlands*, *Pais-Bas*, or *Low-Countries*, from their low situation, in respect to Germany. Formerly, they formed part of *Gallia Belgica*; and afterwards part of the circle of *Belgium*, or Burgundy, in the German empire. The Netherlands, comprising Holland and Belgium, are situated between the second and seventh degrees of east longitude, and between the fiftieth and fifty-fourth degrees of north latitude; being three hundred miles in length, from north to south, and two hundred in breadth, from east to west.

The Netherlands are bounded by the German Ocean on the north; by Germany on the east; by France on the south; and by the British Channel on the west.

The NETHERLANDS, till lately, were united under one government; but, are now divided into two grand divisions; namely,

I. THE UNITED PROVINCES, or HOLLAND, north; and,

II. THE AUSTRIAN, or FRENCH NETHERLANDS, now BELGIUM, south.

As these provinces, or kingdoms, are now entirely distinct from each other, they will be considered under their separate and proper heads: first

THE UNITED PROVINCES, OR HOLLAND.

HOLLAND contains the following provinces; viz.,

PROVINCES.	POPULATION.
1. Friesland	176,000
2. Groningen	136,000
3. Drenthe	46,500
4. Overysel	147,000
5. Gelderland	249,000
6. HOLLAND	748,000
7. Utrecht	108,000
8. Zealand	111,000
9. North Brabant	294,000
	2,046,500

The *north* provinces mentioned above are in the *north*, and constitutes the country called HOLLAND; and those named below are in the *south*, and are called the *Belgic Provinces*, or *Belgium*, except *Luxemburg*, which is a part of Germany.

PROVINCES.	POPULATION.
1. Antwerp	293,000
2. South Brabant	427,000
3. West Flanders	492,000
4. East Flanders	600,000
5. Hainault	430,000
6. Namur	156,000
7. Liege	354,000
8. Limburg	292,000
9. Luxemburg	214,000
	3,258,000

The principal rivers are the *Rhine*, the *Meuse*, the *Moselle*, and the *Scheldt*.

The *RHINE* comes from Germany, and divides itself into several streams, one of which proceeds north, and empties itself into the *Zuyder Zee*; while the rest flow north into the North Sea. The *MEUSE* rises in the east of France, and running north into the Netherlands, joins the *Rhine*, near its mouth.

The *MOSSELLE* rises also in the east of France, and running north-east through the Netherlands into Germany, joins the *Rhine* at Coblenz. The *SCHELDT* rises in the north-east of France, and running north into the Netherlands, enters the North Sea near the mouths of the *Rhine*.

HOLLAND is bounded on the north and west by the German Ocean; on the east, by Westphalia; and on the south, by *Belgium*.

The United Provinces, on the sea-coast, are every where flat and sandy, and so low, that the inhabitants have been obliged to build dykes or mounds along a great part of it, to prevent inundations from the ocean; and when surveyed from a tower, or steeple, this country has the appearance of a large marsh, or bog, that has been drained by miserable ditches. Much of the surface is below the level of the sea, hence this country has neither hills nor mountains to diversify the scene.

In *BELGIUM*, the climate does not differ materially from that of England; but, in Holland, the winter is generally very sharp, and the summer very hot; neither the excessive heat, nor cold, however, lasts above a month or six weeks. The air is foggy, moist, and would be very unwholesome, if not purified by the frost in winter. The soil is by nature unfavourable to vegetation, an obstacle which the industry of the inhabitants has in a great measure surmounted, in making canals to drain their lands;

which, by this method, are rendered fit for pasture, and in many places for tillage. The CANALS in the Low-Countries are innumerable, and are almost as frequent as roads in other countries. In winter, the inhabitants travel on them on skates.

No country can display more interesting proofs than Holland and Belgium, of the energies which man can exert in overcoming the physical evils or difficulties of his situation. Placed below the level of the sea at high water, many parts of this country have been exposed to the most dreadful inundations. The islands that skirt the north-western shores are the evident remains of an old tract of the continent over which the sea has established her dominion. In the tenth century the *Scheldt* spread into broad estuaries, leaving the islands of *Bereiland*, *Wulcheren*, and *Schewen*, as vestiges of the country which they had overwhelmed; and in the fifteenth century, A.D. 1446, the *Salt Lake* near *Dort*, was formed by the sudden inundation which absorbed seventy-two thriving villages, and destroyed 100,000 of the inhabitants. To protect themselves from the occurrences of such calamities, the Dutch erected along their coasts those dykes or mounds as named above, by which they have effectually repelled all further encroachment of the sea.

To the agriculturist and the merchant the Netherlands are particularly interesting. The soil in the Netherlands is a rich loam; and is also in the highest state of cultivation. Owing to the humidity of the climate of Holland, a great portion of it is kept in grass, and the pastures are of unrivalled luxuriance.

From the twelfth to the sixteenth century the Dutch were the most commercial people in the world. For a long period they were the greatest carriers in Europe; their fisheries were most extensive and valuable; and their colonies, both in the East and West Indies, were numerous and profitable. Successive wars, however, greatly injured them; and the tyranny of Bonaparte brought them to the verge of ruin.

The chief towns of Holland are *Amsterdam*, *Rotterdam*, the *Hague*, *Harlem*, and *Dort*. *AMSTERDAM*, the capital, is situated on the Amstel and Wye, and contains 240,000 inhabitants. Being seated in a low marsh, the greater part of the town is built on piles of wood. The houses are of brick, or stone; the streets are well paved, and are kept neat and clean. The most noted buildings are the Stadhouse, or town-house, the Exchange, and the Admiralty. The Stadhouse is considered one of the finest structures in the world. It is built on 14,000 wooden piles.

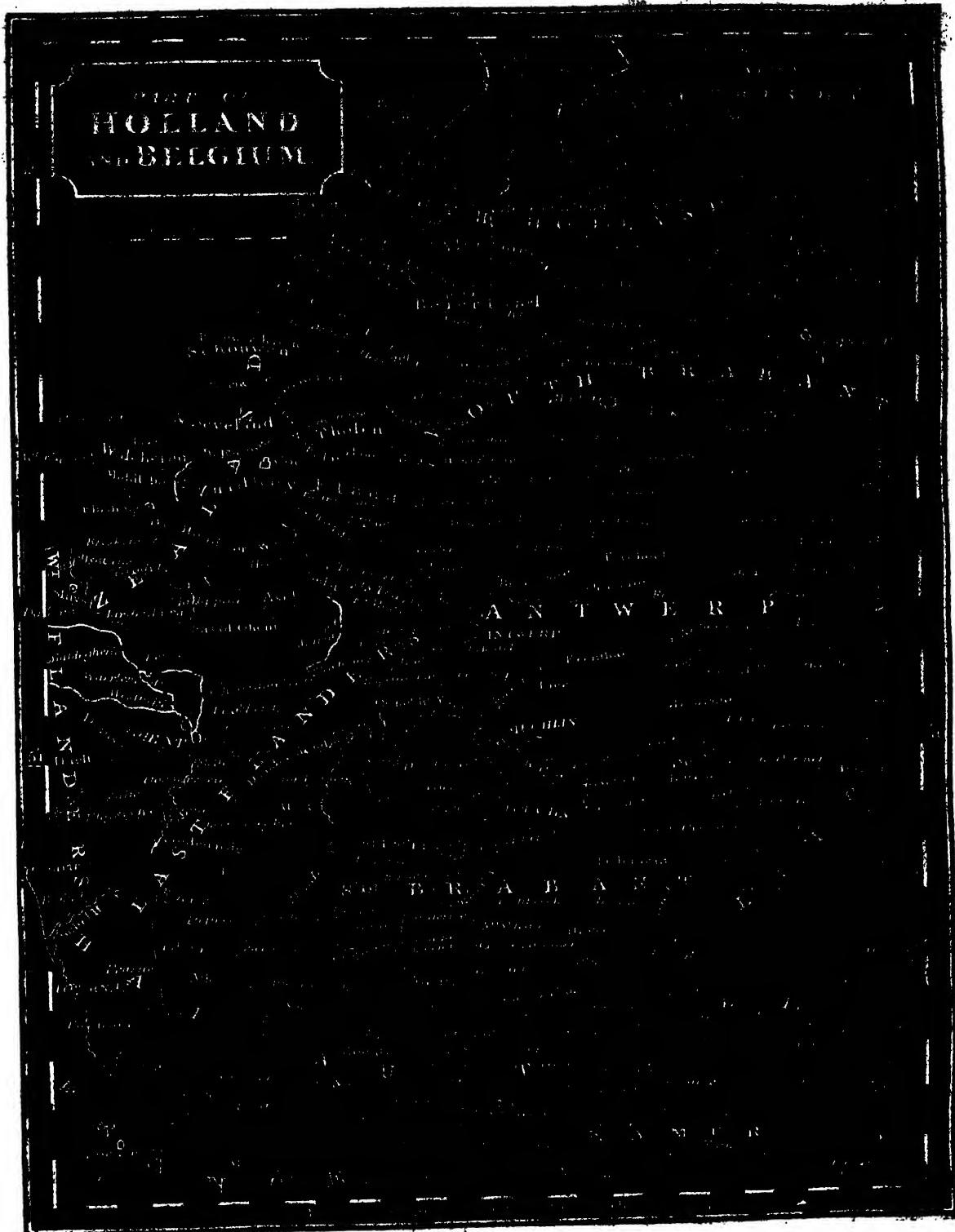
ROTTERDAM, the second city in Holland, is a few miles from the Hague. It has an excellent harbour, and a very extensive commerce. It is noted as the birthplace of the celebrated *Erasmus*. Its population is 56,000.

THE HAGUE is situated about two miles from the sea, and is large, handsome, and very pleasant. Indeed, it is considered one of the most beautiful towns in Europe. Its population is 42,000.

HAARLEM is near the coast, a few miles from the Hague. It is noted for its University, cloths, and siege in 1573. Its population is 23,000.

Harlem is noted for the invention of Printing, about 1440; *Delft*, for earthenware; *Sardam*, for shipbuilding; *Dort*, for its salmon-fishery; and *Utrecht*, for the treaty of peace in 1713, which terminated the wars of Queen Ann.

It will be remembered, that Holland forms only part of what is called the *Netherlands*, or *Low-Countries*, and which was ranked by CHARLES V. as a division of the Ger-



man Empire, under the name of the *Circle of Burgundy*. The tyranny of his son, PHILIP II., who succeeded to the crown of Spain, and to whom the Netherlands became subject, occasioned a general insurrection of the inhabitants. By the assistance of the English, the seven northern provinces were enabled to throw off the yoke, and the SPANIARDS were forced to declare them a free people, in 1609. They were afterwards acknowledged by all Europe to be an independent state, under the title of the "UNITED PROVINCES." The southern provinces continued to be subject to Spain; which, in 1700, ceded them to the House of Austria.

In 1806, Holland was erected into a kingdom by Napoleon Bonaparte, in favour of his brother Louis, and was afterwards incorporated with the French empire. In 1814, the great European powers reunited Holland and Belgium into one kingdom, under the title of "*The Kingdom of the Netherlands*," of which the Prince of ORANGE became its sovereign; but, in 1831, it again was divided into two kingdoms, when Prince LEOPOLD was placed on the throne of BELGIUM.

The principal towns of Belgium are *Brussels*, *Antwerp*, *Ghent*, *Liege*, and *Brugge*.—*BRUSSELS*, the capital, and residence of the king, is one of the most elegant towns of Europe. It is noted for lace, camlets, and carpets. Its population is 80,000. Many towns in the Netherlands are celebrated for warlike achievements; particularly *Aigencourt*, *Ranville*, *Oudenaard*, *Malplaquet*, and *Jemappes*, are noted for battles fought near those places in 1415, 1706, 1708, 1709, and 1792. *Waterloo*, a village, nine miles south of *Brussels*, was the scene of the most sanguinary battle of modern times. This celebrated battle was fought on the 18th of June, 1815, between the *French*, commanded by Bonaparte, and the *English*, *Hanoverians*, and *Prussians*, under the command of the DUKE OF WELLINGTON, in which, after fourteen hours hard fighting, the French were totally defeated, and Bonaparte was again dethroned.

Lille is a large place, containing about 65,000 inhabitants. *Dunkirk* is a noted seaport. *Ghent* contains 60,000 inhabitants, and is fifteen miles in circumference. This city is divided by canals into twenty-six islands; and over the canals are eight hundred bridges. *Ostend* is a large and populous seaport, famous for the siege it sustained against the Spaniards in 1601, and in which, before it surrendered, the Spaniards lost 80,000 men. *Cambrai* is noted for its linen and *cambric*, which last took its name from this city. *Liege* is a large and populous town, and is noted for its manufactures of iron-work and clock-work. Its population is 50,000.

ANTWERP, on the *Scheldt*, about two hundred years ago, was the principal mart in Europe. It is still of great extent, contains two hundred and twelve streets, twenty-two squares, and many noble public buildings, among which, the Cathedral and Exchange are very conspicuous: the former is said to be the finest piece of Gothic architecture in the world; and the Exchanges of *London* and *Amsterdam* were built in imitation of the latter. The Cathedral is five hundred feet long; two hundred and thirty broad, and four hundred and sixty-six to the top of the spire.

The *Scheldt* is here four hundred feet wide, and the city presents a scene of bustle and activity not to be surpassed by any other town in the *Netherlands*. At the *quay*, the river is twenty-two feet deep at high-water. It has good docks, and excellent canals. Antwerp is also noted as the birthplace of *Rubens* the painter.

The Dutch boast of the literary and scientific names of *Erasmus*, *Grotius*, *Boerhaave*, and *Leeuwenhoek*; the FLEMINGS of their *Pandele*, *Rubens*, *Teniers*, and other eminent artists; who, from their peculiar style of painting, have given rise to what is called the *Flemish School*.

The *Dutch* are a laborious, plodding, calculating, grave, bold, but upright people. The *Flemings*, towards the north are scarcely to be distinguished from their Dutch neighbours; towards the south they have adopted the manners, dress, and customs of the *French*. In religion they are more dissimilar: the *Flemings* are Roman Catholics, the *Dutch* are Protestants.

The population of Holland is 2,015,000; of Belgium, 3,258,000.

OF METAMORPHOSES.

To young readers of the classics it is always puzzling and difficult to conceive, how the palpable falsehood of the stories about the gods transforming themselves into various animals and inanimate objects, could ever have obtained credence among any people. When Columbus set the egg upright by bruising one end of it, every one exclaimed that nothing could be more simple than the means by which he had accomplished his end; yet, when he proposed the accomplishment of it, no one had wit enough to suggest that means. It is thus with most other things; what we have seen done, and know the means of doing, usually appears easy. How few people are there who consider the immense difficulty a child experiences in learning to run and to speak! We never remember having found it difficult to accomplish either; and we conclude, with more quickness than logic, that, therefore, neither is difficult. It is a similarly erroneous process of reason, or rather of thought, which leads us to think so meanly of the ancients for their facility of belief. We forget that their mythology was sacred in their estimation, and was well calculated to sanctify, and, so to speak, to realize in their minds, this and similar errors. Ignorant of the principal phenomena of mind and matter, they had no solid scientific criteria by which to judge of propositions of this sort; they believed in a multiplicity of deities, and ascribed all the ordinary actions and passions of humanity to each of them; they believed that they could be consulted at will by the priests, and that to those priests they never failed, unless much provoked by some neglect or impiety, to return an answer. In what manner could a people thus situated, explode the falsehoods of their deluding priests, backed as those falsehoods were, by innumerable mechanical and other deceptions, of the existence of which the people were as unsuspecting, as we are ignorant, of their particular nature? We may pity the delusions of such a people, but we have no fair ground for making them the subject of our ridicule. Place us exactly in the same circumstances, and we should believe as credulously and as unwisely as they did. The tricks of modern conjurors are amusing even to our children only, on account of the celerity of their execution, and the speciousness of their deceptions and illusions; but such tricks among a people destitute of natural philosophy, would be deemed supernatural, and enable the conjuror to dupe a whole nation during his life, and procure himself to be deified at his death. When Columbus or Cortez first showed the fatal and swift effects of artillery to the natives

of America, that simple and cruelly ill-treated people imagined the report to be thunder, the flash lightning, and the European Gods! All this seems very simple to us who have from the earliest childhood been acquainted with the nature and effects of gunpowder: but in fact what else should we have imagined had we been simple enough to worship the planets, and been at the same time totally ignorant of the beautiful science of chemistry, and of the nature and phenomena of the air? Let us beware then how we ridicule the simple Americans for a mistake which, taking their superstition and their ignorance of philosophy into account, was any thing but an illogical conclusion. Even more natural was the credulity which the Greeks accorded to the doctrine of Metamorphosis; for no part of the machinery of deception was visible to, or tangible by them. They were told that a god, for some human or superhuman purpose, had changed himself into a bird or a beast. Even if the very beast which was said to be the metamorphosed god had been shown to them, how were they to deal with the falsehood? None of the grand and beautiful, though simple laws of natural philosophy could aid their inquiry, for of those laws they did not even suspect the existence. Mathematical demonstration of the falsehood of the assertion, then, they cannot be blamed for not producing or making use of them. Are they more blameable for not having theoretically, and by induction, arrived at a just conclusion? Not a whit. How were they to prove a negative? The priest asserted that on a certain day, he had seen David transform himself into a tree, or Jupiter metamorphose himself into a shower of gold to win the affection of a mortal beauty; who could gainsay his assertion? They had not, as we have, the truths of science to guide them, as to the possibility of such a transformation, or the still more glorious truths of scripture to teach them, that Jupiter and Diana, and the rest of the *dramatis personae* of the heathen mythology were pure fictions. They believed that such beings existed, and deigned to communicate their will and their deeds to their priests; and, thus, believing it was in point of fact, utterly impossible for them to withhold their credence from any fiction, however "open, gross, and palpable," which those priests chose to palm upon them, as the history, or the will, promises, or commands of those exceedingly feared, and, supposedly powerful and vindictive personages. In history, as in real life, we must constantly take into consideration all the circumstances under which people think, act, or believe, or we shall be perpetually acting unjustly towards them, and unwisely towards ourselves. We happily live in times when it is impossible for superstitious imposture to be successful; we have a light to light our steps, and a perpetual standard by which to judge of every thing which presents itself to us for examination or belief. But we must not, therefore, in looking back upon ages of superstition and error, modes of thinking from which we are ourselves exempted, not by any superior sagacity of our own, but by the union of divine truth, and the philosophy of which it has been the parent and the guardian.

NIGHT.

How solemn and how still is night! Yet it is not without its beauty. We have no longer the glorious splendour of the sun, or the various shades and colours of the innumerable objects upon which he, during the day-season, sheds radiance and invigorating warmth. Nay, during

many nights we have not even the subdued light of the pale moon, and the ever-twinkling stars, to console and compensate us for his absence. How dreary, we exclaim, how exceedingly irksome, are the long dark nights! When we make these complaints, we forget the inconveniences to which we should be subjected were there perpetual day. We know that sleep is as necessary as food to the support and invigoration of our nature. And we ought to remember, also, that the night is peculiarly adapted to enable us to reap the fullest benefit from this invaluable and indispensable refreshment.

The day, by some from avarice, and by some from hard necessity, is spent in toil and hurry; but the approach of night gives a respite to the meanest labourer. Darkness throws her mantle over the face of the earth, and at once fits us for repose, and warns us that the season for taking it has arrived.

To how many aching hearts and wearied bodies does night bring relief! Selfish, indeed, must those be who would wish to purchase a few additional hours of needless, perhaps even criminal activity, by a sacrifice of that recurring darkness which gives a temporary calm to the troubled spirit, and repose and a renewal of strength to the over-fatigued in body.

Even as to mere feeling, we incline to think the night worthy of our admiration rather than of our dislike. There is something unspeakably solemn and soothing in the unbroken darkness, and in the undisturbed silence of the night. The whole earth seems to be hushed into rest, and shrouded from observation and disturbance. It is then, that solemn and serious thought comes most frequently and spontaneously across our minds. And it is then, that we seem more peculiarly to feel a reliance upon, and a necessity for, the watchful and benevolent guardianship of God.

It is, indeed, as true as it is lamentable, that there are but too many who are apt to feel, during the night, rather an increased desire for their Creator's care, than an increased reliance upon His mercy. We allude to those who timid from nature or improper education, view the darkness of night as being a probable source of injury to them. If any of our young readers are so unfortunate as to be guilty of this very childish weakness, we entreat of them to take speedy measures for ridding themselves of it. Let them be assured, that an eye watches over them which never winks, a mercy shields them which never slackens or abates, and an Almighty protects them, which un-diminished by time, and unchanged by varying seasons or circumstances. The GUILTY should tremble in the night, not because it is night but because they are guilty. Their peril is not increased by the night; they are equally in danger in the full blaze of the noon-tide sun. The good, on the other hand, should view the night with no feeling of dread. He who watcheth over them, hath made the night. His eye penetrates its murkiest shades; his arm can smite or save alike, at all hours, and under all circumstances.

If life is but a dream, what are its pleasures?

What we have in us of the image of God is the love of truth and justice.—*Demosthenes*.

He who gives for the sake of thanks knows not the pleasure of giving.

The good man is just in little things, the wicked man is little in great ones.

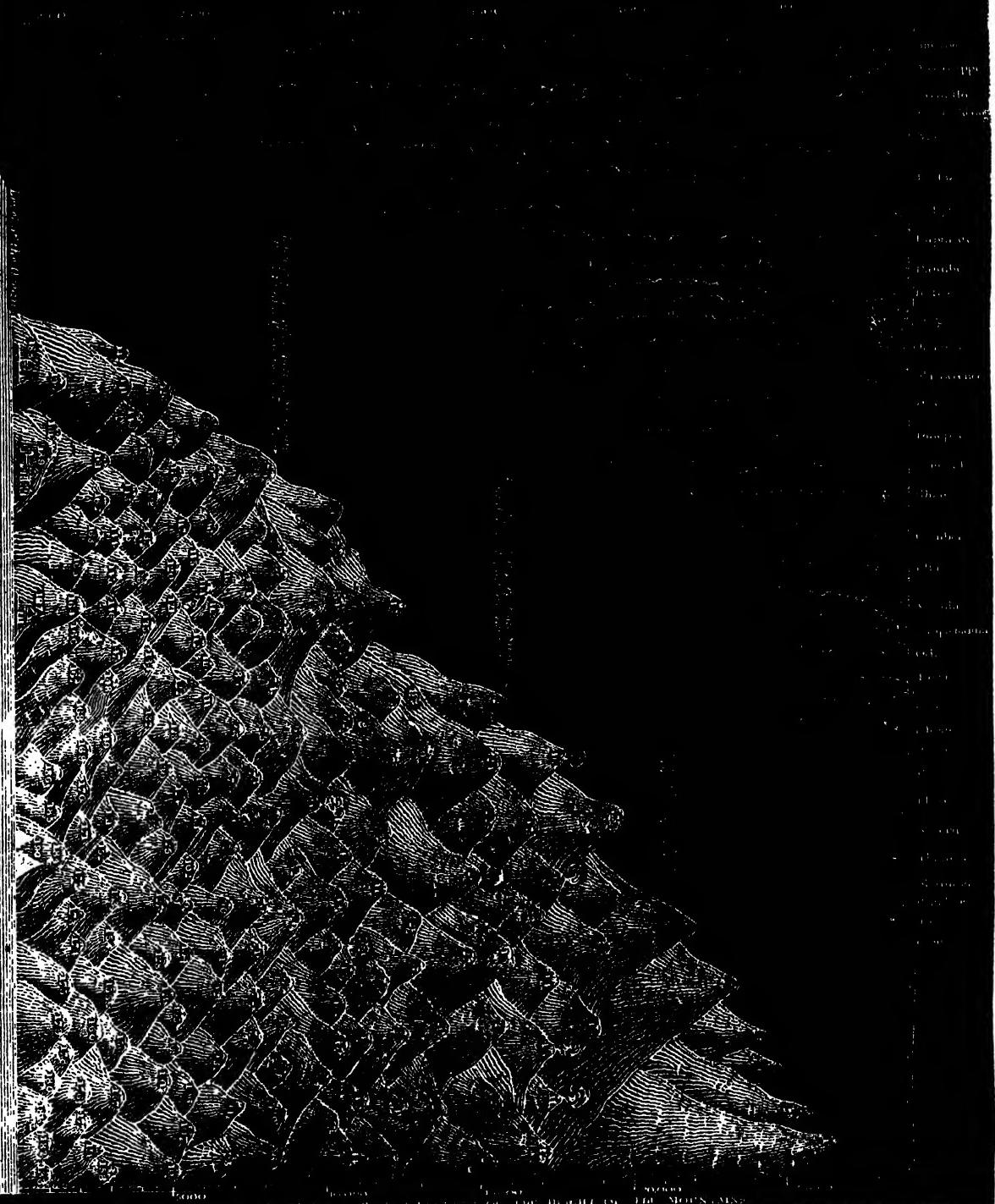
No. XXX]

GUIDE TO KNOWLEDGE.

PRICE
ONE PENNY.

COMPARATIVE CHART OF THE PRINCIPAL RIVERS AND MOUNTAINS.

SCALE OF ONE HUNDRED MILES.—THE DISTANCE IN FEET IS INDICATED BY THE NUMBERS.



SCALE OF ONE HUNDRED MILES.—THE DISTANCE IN FEET IS INDICATED BY THE NUMBERS.

COMPARATIVE HEIGHT OF MOUNTAINS.

No.	NAME	Where Situate.	Height feet.	NAME	Where Situate.	Height feet.	
1	Dhawalagiri, or Dholagir, highest Peak of the Himalayan Mountains in Tibet	Asia	26,462	76	Il Gran Sasso, highest of the Apennines	Europe	8,791
2	Yamunavati, or Jamaturi, in the valley of Nepal	Asia	28,800	77	Pass of the Tauris of Helgenblit	Europe	8,381
3	A mountain, supposed to be Dhatun	Asia	24,740	78	Lomnits Peak, highest of the Carpathian Mountains	Europe	8,438
4	In the valley of Nepal	Asia	24,620	79	Sognghellau, on the frontier of Norway	Europe	8,114
5	In the valley of Nepal	Asia	28,052	80	The Krivan	Europe	9,027
6	Chimborazo, the highest peak of the Andes	America	21,451	81	Mount Unduk, the highest in Transylvania	Europe	7,873
7	Grand Peak, on the frontiers of New Mexico	America	19,783	82	Great St. Bernard	Europe	7,962
8	Ringurahua, E. chain of Andes, near Quito	America	19,478	83	Col de la Seigne	Europe	7,898
9	Antisana, S.E. of Quito	America	19,126	84	Mount Vergy, in Savoy	Europe	7,495
10	Cotopaxi, in E. chain of Andes, S. of Quito	America	18,862	85	Mount Della Sibilla	Europe	7,495
11	Popocatepetl	America	17,718	86	Mount Maggiore, near Verona	Europe	7,385
12	Illiniza, near Quito	America	17,578	87	Port de Gavarnie, near Jaca	Europe	7,642
13	El Alter de los Collanes	America	17,444	88	In the Isle of Bourbon	Europe	7,680
14	Mount Elias, off the N.W. coast	America	17,340	89	Le Tournette, in Savoy	Europe	7,528
15	Orizaba, Mexico	America	17,271	90	Passage du Gries, E. of the Simplon	Europe	7,515
16	Sangai, E. chain of the Andes, in Peru	America	17,125	91	Col Ferret	Europe	7,610
17	Mowna Roa, Sandwich Islands	America	16,474	92	Mount St. Bartholemey	Europe	7,365
18	Sinchulahua, S.E. of Quito	America	16,423	93	Mount Cimone, S. of Modena	Europe	6,971
19	Cotocache, near Quito	America	16,403	94	Little St. Bernard	Europe	7,153
20	Pichincha, near Quito	America	16,014	95	Pass of Mount Cenis	Europe	6,773
21	Mont Blanc	Europe	16,830	96	Col de Tende	Europe	6,885
22	Corazon, W. of Cotopaxi	America	15,774	97	St. Gotthard	Europe	6,803
23	Carguciorazzo, near Quito	America	15,655	98	Pass of the Simplon, in Valais	Europe	6,575
24	Mount Rosa, in the Valais	Europe	15,527	99	The Sptugen, N. of Lake Como	Europe	6,813
25	Mount Egmont, New Zealand	Europe	15,304	100	Pass of Lavareze	Europe	7,344
26	The Ortelspitze, in the Tyrol	Europe	14,927	101	Pass of Tourmalet	Europe	7,193
27	Mount Cerwin, in the Valais	Europe	14,754	102	Sylttoppen	Europe	6,474
28	Summit of the Col de Lautiere, near Briancon	Europe	14,534	103	Sutitelta, on the frontiers of Norway	Europe	6,173
29	The Finsteraarhorn	Europe	14,096	104	Swuken, in Sweden	Europe	6,050
30	Jung-frauhorn, in Oberland	Europe	13,726	105	Roettetruck, near Swuken	Europe	6,000
31	Mount Ozon	Europe	13,444	106	Soll Tinde	Europe	5,811
32	Needles of Argentieri, N.W. of Mont Blanc	Europe	13,381	107	Mount Mizen, highest of the Cevennes	Europe	6,602
33	Breithorn	Europe	12,993	108	Mount d'Or	Europe	6,155
34	Bochonda, China	Asia	12,800	109	The Cantal	Europe	6,089
35	Ophir, in Sumatra, nearly upon the Equator	Asia	12,755	110	Olympus	Europe	6,111
36	Ararat, in Armenia	Asia	12,700	111	Little Altai Central	Asia	6,1
37	Farm House of Antisaya	America	13,425	112	Pavliuskoe Kemez, summit of the Altai Mountains	Asia	6,750
38	Mount Atlas, in Morocco	Africa	12,500	113	Peak, in the Azores	Africa	7,016
39	Peak of Teneriffe	Africa	12,358	114	Schneeberg	Africa	6,800
40	Great Clocknor, on the borders of Carinthia	Europe	12,543	115	Kainberg	Africa	5,644
41	Galensteck, near the source of the Rhone	Europe	12,013	116	Blue Mountains, Jamaica	Europe	7,271
42	Todberg, highest of the Rhaetian Alps	Europe	11,832	117	The Washington, in W. Mountains, New Hampshire, highest point in U. States	America	6,925
43	Peak of Mulahacén, summit of the Sierra Nevada	Europe	11,806	118	Mount Tendre, S. of Neufchatel	Europe	5,340
44	Rock Molun	Europe	11,428	119	The Chasseron	Europe	5,303
45	Mount Perdu, highest point of Pyrenees	Europe	11,265	120	Chascarel	Europe	5,290
46	Kjatenberg	Europe	11,073	121	Sulphur Volcano, Guadalupe	Europe	5,220
47	Marbore	Europe	11,185	122	Schneekoppe, summit of the Riesangeberga	Europe	5,220
48	Mount Vignemale	Europe	11,003	123	Oehsenkopf, summit of the Fichtelgeberga	Europe	5,211
49	The Stolla, in the Grisons	Europe	11,166	124	Sauto, on the frontiers of Norway	Europe	5,900
50	Vogelsberg, in the Grisons	Europe	10,894	125	Pass of Tauras of Radstadt	Europe	4,060
51	Col du Mount Cervin, E. of Sion, in Valais	Europe	11,182	126	Katscherger Pass, S. of Radstadt	Europe	4,131
52	Mount Ena	Europe	10,946	127	Heela, in Iceland	Europe	4,844
53	The Mount Velan, highest summit of Great St. Bernard	Europe	11,003	128	Melderskogen, near Rosenthal	Europe	4,960
54	Mountain in Otaheite	Europe	10,895	129	The Dale, N. W. of Geneva	Europe	4,666
55	Steiner Alp, highest of the Carnic Alps	Europe	10,941	130	Pay de Dame	Europe	4,658
56	Maladetta	Europe	10,479	131	Ida, in Candia	Europe	4,560
57	Peschiota, highest point of St. Gotthard	Europe	10,620	132	Feldberg, in Styria	Europe	4,560
58	Platey Cogel, in the Tyrol	Europe	10,333	133	Pass of Mount Brenner	Europe	4,560
59	Marischalhorn, in the Grisons	Europe	10,894	134	Sne Fiall, in Iceland	Europe	4,570
60	Mount Viao	Europe	10,051	135	Schneeburg, on the S.E. frontier of Glatz	Europe	4,117
61	Awataha, in Kamtschaika	Asia	9,600	136	Schwarzwald, summit of the Erzgeberga	Europe	4,160
62	Elburz, highest point of Caucasus	Asia	9,585	137	Heidelberg, summit of the Bohmerwald	Europe	3,960
63	Libanon, in Syria	Asia	9,526	138	Parnassus	Europe	4,370
64	Dachstein, summit of the Hallstädter	Europe	9,627	139	Ben Nevis, Invernesshire	Europe	3,724
65	Pic du Midi	Europe	9,374	140	Ben Lawers, Purtshire	Europe	3,903
66	Sugarloaf, summit of the Great St. Bernard	Europe	9,360	141	Ben More, Perthshire	Europe	3,940
67	Conigon	Europe	9,207	142	Ben Avourd, Aberdeenshire	Europe	3,691
68	Mount Cramont, S.E. of Mont Blanc	Europe	9,058	143	Grenuarre	Europe	3,713
69	Walzmar	Europe	8,790	144	Vesuvius	Europe	4,179
70	Rathausberg	Europe	8,715	145	Mount di San Gennaro, N.E. of Rome	Europe	3,955
71	Mount Rotondo, in Corsica	Europe	8,696	146	Parnassus, in I. of St. Charles, near Spitzbergen	Europe	3,571
72	Gete, in the Island of Java	Asia	8,500	147	Snowdon	Europe	3,166
73	Summit of the Sierra Guadarrama, Madrid	Europe	8,620	148	Sea Fell, Cumberland	Europe	3,022
74	Summit of the Serra d'Estrella, Portugal	Europe	8,520	149	Skiddaw, Cumberland	Europe	3,056
75	Port de Pineda	Europe	8,249	150	Helvellyn, Cumberland	Europe	3,056

No.	NAME.	Where Situate	Height in Feet.	No.	NAME.	Where Situate	Height in Feet.
151	Ben Lomond	Europe	3,240	169	Mourne Atts Down	Europe	2,600
152	Schihallien, N.W. of Kenmore	Europe	3,281	170	Nephin Maye	Europe	2,634
153	Ben Ardtanich, Perthshire	Europe	3,500	171	Cader Idris	Europe	2,650
154	Tafelberg, near Cape of Good Hope	Africa	3,831	172	Treecastle Beacon	Europe	2,590
155	Table Mount	Africa	3,682	173	Cheviot, Northumberland	Europe	2,658
156	Peak, summit of the Allegany Mountains	America	3,955	174	Whernside, Yorkshire	Europe	2,884
157	Schnekopt, summit of the Thuringerwald	Europe	3,531	175	Ingleboro, Yorkshire	Europe	2,861
158	Jancsberg, summit of the Sudets	Europe	3,195	176	Plynlimmon	Europe	2,463
159	Brocken, summiit of the Hartz	Europe	3,486	177	Dunriggs, South of Peebles	Europe	2,408
160	Ben Cruachan, Argylshire	Europe	3,390	178	Stea Fall, Isle of Man	Europe	2,004
161	Macguillieuddy's Rocks, Kerry	Europe	3,404	179	Gawsand Beacon, Devonshire	Europe	1,704
162	Raticosa, N.E. of Florence	Europe	2,894	180	Dundry Beacon, Somersetshire	Europe	1,668
163	Radicofana, S. of Sicuna	Europe	3,055	181	North Cape	Europe	1,265
164	Stromboli, Lapari	Europe	2,684	182	Malvern, Worcestershire	Europe	1,414
165	Eponies, lake of Ischia	Europe	2,517	183	Wrekin, Shropshire	Europe	1,820
166	Volcano, in Lapari	Europe	2,556	184	Soracte, N. of Rome	Europe	2,268
167	Silzberger Kompt, summit of the Westerwald	Europe	2,873	185	Eugenean Hills, near Vicenza	Europe	1,610
168	Kreutzberg, summit of the Hohe Rhone	Europe	2,982	186	Gibraltar	Europe	1,440

COMPARATIVE CHART OF THE PRINCIPAL RIVERS & MOUNTAINS IN THE WORLD.

RIVERS.

The annexed Engraving exhibits at a glance the relative sizes of all the great Rivers and Mountains in the World. Rivers are large floating bodies of water that descend in currents, with different degrees of velocity, towards the sea, or some large lake, into which their waters fall. They are necessarily proportioned in length and breadth to the countries through which they flow; hence, they are of various lengths, breadths, and depths; and some of them differ in these respects as they pass on from their sources, being in some places wide, in others narrow. The sources of Rivers are mostly *springs*; and, as they proceed, they are augmented by other streams, such as brooks, and rivulets, and drainings of waters from high grounds and mountains. For the most part, they take their rise among mountains, and from thence pass through the vales below. The fall of rain, and the melting of ice and snow, will frequently so increase the quantity of water in rivers as to overflow their banks, so that the contiguous grounds will become inundated to a very great extent. In some rivers, such as the *Nile*, for instance, this overflowing is periodical, and is necessary for the fertility of the country through which that river takes its course. The Rivers of the world are very numerous; those of the old continent alone exceeding four hundred, and those of the new world being about one hundred and fifty. The king of rivers appears to be the *Amazon*, of South America, which exceeds 3000 miles in length, and the *Mississippi* is about 4000,* while the *Oni*, in Asia, is but 2500; the famous *Ganges*, but 1500; the *Danube* 1600; and our *Thames* not more than 200.

EUROPEAN RIVERS.

The principal rivers of Europe are the *Volga*, the *Danube*, the *Dnieper*, the *Don*, the *Rhine*, the *Dwina*, the *Douro*, and the *Thames*; with many others of less note.

The *Volga*, the largest river in Europe, takes its rise in the Valday mountains, in the northern parts of Russia; and after a meandering course of about 1700 miles, falls into the Caspian Sea, at *Astracan*, by seven large mouths. This celebrated river has a navigable communication with all the rivers that fall into the Lake *Ladoga*, which being continued to St. Petersburgh, unites the *Caspian Sea* with the *Baltic*.

* According to a recent account, published in America, the *Mississippi* is said to exceed 4000 miles.

The *Danube*, a noble river of Germany, and, next to the *Volga*, is the largest river in Europe. It rises in Swabia, on the borders of Alsace, in the Black Forest, and becomes navigable at *Ulm*; then passing through Bavaria, it flows by *Vienna*, *Presburg*, *Grun*, and *Belgrade*, and falls into the Black Sea by several mouths. This river is wide and deep, and receives sixty rivers, large and small, in its course.

The *Rhine*, the next considerable river in Germany, takes its rise from two springs in the highest part of the Alps, in Switzerland, and runs into the Lake of Constance, from whence it continues its course, and flows into the German Ocean, by *Dort*, *Rotterdam*, and *Williamstadt*. The navigation of this river, like that of the *Danube*, is interrupted by several cataracts, the principal of which is at *Shauffausen*, in Switzerland, where the whole river falls from a height of seventy-five feet.

The *Don*, one of the largest rivers in Europe, takes its rise in the government of *Tula* in *Russia*; and dividing the eastern part of this Empire from Asia, falls into the sea of Azoph, by two mouths. Its length is 1100 miles.

The *Dwina*, also a large river of *Russia*, takes its rise in a lake of the same name, in the province of *Wologda*; and after running a northerly course, falls into the White Sea, near *Archangel*.

The *Douro* is a large river of Spain, which takes its rise on the borders of Arragon, and flowing westward, passes through the province of Leon, and the kingdom of Portugal. It empties itself in the Atlantic Ocean, a little below *Oporto*. Its whole extent is about 400 miles.

The *Thames*, though a small river when compared with the above, is not only one of the most celebrated rivers of England, but of the world. Large ships of war come up to *Deptford*; and merchant-ships of eight hundred ton burthen, frequently lie at the quays close to London Bridge. The tide flows up to Richmond, a distance of about seventy miles, by its windings, from the ocean.

The other principal rivers of England are, the *Severn*, *Trent*, *Mersey*, *Tyne*, *Tees*, *Medway*, *Northern Ouse*, *Southern Ouse*, *Wye*, and *Avon*.

The *Severn*, the second river of importance in England, rises in the mountain called *Plynlimmon*, in Wales. Whence, after a winding course, it flows by *Welsh Pool*, and enters Shropshire by *Shrewsbury*, near which it receives the waters of the *Roden* and the *Tern*. Thence it continues its course to *Bridgnorth*, and enters Worcestershire near *Bewdley*, near which it receives the waters

of the *Stour*. Thus increased, it flows on to *Worcester*, and about four miles below that city, it is joined by the *Teme*. Augmented by the waters of all these rivers, it pursues its course to *Tewkesbury*, where it is joined by the *Upper Avon*. From *Tewkesbury* it flows on to *Gloucester*, and falls into that part of the Western Sea called the Bristol Channel. The tide flows up the *Severn* as far as *Tewkesbury*, which is nearly seventy miles from its mouth. The length of the *Severn* is 150 miles, that of the *Trent* 100 miles. The remainder of the English rivers are of minor importance.

The *Shannon*, which gives title of Earl to a branch of the family of *Boyle*, is a noble river of Ireland, larger than any in England, but not navigable above fifty miles, on account of a ridge of rocks running across it near Limerick. It runs from north to south upwards of 200 miles, spreading itself into many large and beautiful lakes of different extent, from five to ten, and fifteen miles; some of which are adorned with fertile and beautiful islands.

The chief rivers of Spain are the *Tagus*, *Douro*, *Guadiana*, *Guadalquivir*, and *Ebro*.

The *Tagus* takes its rise in a chain of mountaine 150 miles to the south of the Pyrenees, whence it flows towards the south-west, through a course of about 450 miles, and falls into the Atlantic Ocean at *Lisbon*. By the accumulated waters of several others, this river becomes a noble stream, and its estuary forms a capacious harbour for shipping, from two to nine miles in breadth. The *Douro* is described above.

The *Ebro*, the ancient *Iberus*, takes its rise on the borders of Biscay, and crossing Navarre, Arragon, and Catalonia, falls into the Mediterranean a little below *Tortosa*, after a course of about 400 miles.

The *Guadiana* springs in New Castile, whence it flows towards the west to the confines of Portugal, through which it makes a circular sweep, changes its direction to the south, and falls into the Bay of Cadiz. This river in its course runs a considerable way under ground, and emerges. Its whole length is about 400 miles.

The *Guadalquivir* flows still more to the south, passes Seville, and enters the Bay of Cadiz, a little north of that port.

The principal rivers in Italy are the *Po*, which rises in Piedmont, and falls into the Adriatic Sea; the *Adige*, which rises in the Tyrol, also falls into the Adriatic; the *Arno*, which takes its course in the Apennines, empties itself in the Tuscan Sea, near *Pisa*; and the *Tiber*, which also rises in the Apennines, passes by *Rome*, and falls into the Mediterranean, a little below that city.

The chief rivers of European Turkey are the *Danube*, the *Save*, and the *Pruth*. The *Danube* has always been considered the chief of the Turkish rivers; but this noble stream which is described above, has been rendered by recent events only the northern boundary of the empire. The *Save* separates Turkey from Austria, and the *Pruth* forms part of the boundary between Turkey and Russia.

The principal rivers of France are the *Rhine*, the *Rhone*, the *Loire*, the *Seine*, and the *Garonne*.

The *Rhine*, which separates France from Germany, is described above. The *Rhone*, a large and rapid river, takes its rise in the centre of Switzerland, about five miles from the source of the *Rhine*. After flowing through the Lake of Geneva, it takes a southern direction, and forms the boundary between France and Savoy; whence it takes a south-west course to Lyons, after which it runs due south, and falls into the Mediterranean, after a course of about 500 miles.

The *Loire* rises from the western side of the *Cevennes*, and flows in a northerly direction for about half its course, and then changing towards the west, falls into the Bay of Biscay, a little below *Nantz*, after a course of about 450 miles.

The *Garonne* has its source in the Pyrenees, and, after traversing a north-east course, falls into the Bay of Biscay, below Bordeaux. Its length exceeds 200 miles.

The *Seine*, one of the most picturesque rivers in France, rises in Burgundy, and flows through a series of beautiful and romantic valleys to Paris. It thence takes a meandering course, and falls into the English channel, between *Havre-de-Grace* and *Harfleur*.

The principal rivers of Germany are the *Rhine*, *Danube*, *Main*, *Elbe*, *Oder*, and *Weser*. The *Rhine* and *Danube* are described above. The *Main* is a large and important tributary of the *Rhine*. It is formed by the union of the Red and White *Main*, from the mountains of Franconia, and joins the *Rhine* near *Mentz*.

The *Elbe*, one of the largest rivers in Germany, has its source in *Silesia*. After passing through Bohemia, and the kingdom of Saxony, it falls into the German Sea, below Hamburg. Its whole length is about 500 miles. The tide of the *Elbe* runs ten miles above *Hamburg*, to which city it conveys vessels of considerable burden.

The *Oder* has its source in *Moravia*, and runs from south to north, through Silesia and Brandenburg; then passing by *Stettin*, and dividing Eastern from Western Pomerania, it falls into the Baltic Sea. This river is connected by canals to the *Elbe* and *Vistula*, hence it is of great importance to commerce.

The *Weser* is formed by the *Werra* and the *Fulda*, at *Munden*, and flows through the territories of Hanover, Brunswick, Prussia, &c. It falls into the German Ocean, about forty miles below *Bremen*.

The principal rivers of Prussia are the *Rhine*, *Ems*, *Elbe*, *Vistula*, *Bog*, *Niemen*, and *Pregel*.

The *Rhine* and *Elbe* are described above. The *Vistula* has its source in the Carpathian Mountains, on the confines of Silesia, flows through Lithuania and West Prussia, and falls into the Baltic Sea, by three outlets, near *Dantzic*. This noble river is navigable for several hundred miles, and is the great channel for the conveyance of corn and other articles from the interior of Poland.

The *Bog*, a river in Prussian Poland, rises in Galicia, and falls into the *Vistula*, to the north-east of Warsaw. The *Pregel* originates in some lakes near the south-east extremity of the dominions, flows by *Konigsberg*, and falls into the *Frische Haff*. The *Elbe* constitutes the separation between the Prussian territories and Westphalia. The *Spree* rises in the kingdom of Saxony, flows through Berlin, and enters the *Elbe*. The *Vistula* and the *Memel* likewise complete their courses by flowing through this kingdom. The *Niemen* rises a few miles south of Minsk, in Russian Poland, receives the *Wilna* at Kowno, then flows through East Prussia, where it receives the name of *Memel*, and falls into the *Curische Haff* (a large bay), about seven miles from *Tilsit*.

The chief rivers of Austria are the *DANUBE*, with its tributaries—the *Drave*, *Muhr*, *Save*, *Morava*, *Theis*, *Maross*, *Elbe*, *Moldau*, *San*, and *Dniester*.

The *Drave* has its source in the Tyrol, flows through Carinthia and Stiria, separates Croatia and Slavonia from Hungary, and joins the *Danube* below *Essek*. The *Muhr* flows through Stiria, and joins the *Drave* in Hungary.

The *Save* takes its rise about six miles south of *Villach*, runs through Stiria and Croatia, separates Slavonia from

Turkey, and falls into the Danube between Semlin and Belgrade.

The *Morava* flows through Moravia, separates Austria from Hungary, and falls into the Danube above Presburg.

The *Theis* is a large river of Hungary, formed by two streams, called the *Black* and the *White Theis*. After a course of about 500 miles, it flows into the Danube at Sulankeman, and is navigable almost to its source.

The *Maross* has its source in the Carpathian mountains. It crosses Transylvania, enters Hungary, and forms the boundary of the Banat till it falls into the *Danube*. For the river Elbe, see Germany.

The *Moldau* is a large and rapid river which issues from the mountains that separate Bohemia from Batavia, and joins the Elbe a little above Melnik.

The *San* is a river of Austrian Poland, which falls into the Vistula near Sandomir.

The *Dniester* is a large river that issues from a lake among the Carpathian mountains, in Austrian Galicia, flows through a part of Russia, and falls into the Black Sea at Belgorod, after a course of 600 miles.

The principal rivers of European Russia are the *Volga*, *Don*, *Dnieper*, *Bog*, *Kama*, *Dwina*, *Neva*, and the *Petchora*.

The *Dnieper*, the ancient *Borysthenes*, takes its source in Smolensk, and after a winding course of about 800 miles, falls into the Black Sea, between Oczakov and Kinburn.

The *Neva* issues from Lake Ladoga, and empties itself into the Gulf of Finland, a little below St. Petersburg, by three mouths. It is navigable its whole course.

There are two *Dwinsas*, the northern and the southern; the former falls into the White Sea, near Archangel; and the latter, into the Gulf of Riga.

The *Kama* is a large river that traverses Perme, from north to south, and falls into the Volga, twenty-four miles below Kusan.

The *Oka* is a considerable river that rises in the government of Orel, flows north-east, and after receiving the *Moskwa*, falls into the Volga, at Nisnei-Novgorod.

The *Petchora* takes its rise in the Ural mountains, flows northward through the governments of Perme and Archangel, and falls into the northern ocean, after a course of about 600 miles.

ASIATIC RIVERS.

The principal rivers of Asia are the *Ob*, or *Obi*, the *Hoang-ho*, the *Lena*, the *Amour*, the *Yenissey*, the *Indus*, the *Ganges*, the *Burhampooter*, the *Euphrates*, the *Tigris*, the *Jihon*, the *Ava*, the *Godavery*, the *Nerbuddah*, the *Kistna*, and the *Nihon*.

The *Ob*, or *Obi*, is a large river of Asiatic Russia. It takes its rise on the southern side of the Altai mountains. This river runs northward into the Frozen Ocean, and divides a considerable part of the empire from Europe. Its length is 2800 miles.

The *Hoang-ho*, a celebrated river of China, takes its rise among the mountains of Thibet. Though broad and rapid, it is in many places so shallow, as to be untenable to navigation. It is also liable to overflow its banks.

The *Kiang-ku* derives its origin from the same mountains as *Hoang-ho*; and, after flowing near together, they separate to the distance of more than 1000 miles; but terminate in the same sea within 100 miles of each other.

These two rivers are the largest on the old continent, and are only exceeded in length by the rivers Amazon and Mississippi.

The *Lena*, a large river of Asiatic Russia, rises in the mountains to the north-west of lake *Baikal*. The channel of this river is broad and deep, and contains many islands.

The *Amour*, a large river of Asia, rises in Chinese Tartary, and flows into the sea of Ochotsk. Its existence was first known to the Russians in 1639.

The *Yenissay*, a large river of Asiatic Russia, rises on the borders of Chinese Tartary, and, taking a northern course, runs into the Frozen Ocean.

The *Indus*, a celebrated river of Hindostan, is supposed to take its rise on the north side of the *Himaleh* mountains; whence, after a long course, first to the north, and then to the south-west, it falls into the Arabian, or Persian sea, by several channels.

The *Ganges* is also a celebrated river of Hindostan, whose source, for a great length of time, was uncertain. A recent survey, however, made by the order of the Indian British Government, has succeeded in determining its position. It has been found to issue from a small stream from under a mass of perpetual snow, accumulated on the southern side of the lofty *Himaleh* mountains. Shortly after its gushing through an opening at *Hurdwar*, it becomes navigable; whence it flows in a south-east direction, and falls into the *Bay of Bengal*.

The *Burhampooter*, one of the largest rivers of India, rises in Thibet, near the sources of the *Indus*. It first flows eastward towards China, then turning suddenly to the south, to *Assam*; it then flows nearly due west, when it takes a southern direction, and falls into the Bay of Bengal, after a course of about 2000 miles.

The *Jihon* is a large river of central Asia, the principal part of whose course is through Independent Tartary. This river is the Ancient *Oxus*, which formerly emptied itself into the Caspian, but now falls into the sea of *Aral*. Its course is 1200 miles.

The *Ava*, or *Irrawaddy*, is the chief river of the Birman Empire. Its source has not yet been explored, but it is supposed to take its rise in the eastern part of *Thibet*.

The *Godavery*, the *Nerbuddah*, and the *Kistna*, are all celebrated rivers of Hindostan. The *Sihon*, or *Sira*, is a large river of Independent Tartary; and after a long course, chiefly to the north-west, falls into the sea of *Aral*. The *Sirr* or *Sihon* is the ancient *Iaxartes*.

The *Euphrates*, a celebrated river of Asiatic Turkey, has its rise among the mountains of Armenia, from two principal sources. This river is made to communicate with the *Tigris*, by several artificial cuts; after which, both rivers unite at the town of *Korna*, upwards of 100 miles from the sea.

The *Tigris*, also a celebrated river of Asiatic Turkey, issues from the mountains of America, about fifteen miles east of the source of the *Euphrates*; and, after flowing a great length of its course parallel to that river, joins it as above-mentioned. These two rivers constitute such distinguishing features of the country through which they flow, that it has received the name of *Mesopotamia*, signifying between the rivers.

AFRICAN RIVERS.

The chief rivers of note in Africa are the *Nile* and *Niger*. The former traverses Egypt through its whole extent, and, by its inundation, produces all the fertility for which that country has been so long distinguished. This overflow arises from the periodical rains, which fall from June to September, throughout the northern tropical

The *Niger*, a great river of central Africa, is but little known, though the researches of the late *Captain Claperton*, and his successors, the brothers *Landé*, promise to make us better acquainted with it. The most probable opinion seems to be, that it joins the *Congo*, and discharges its volume of water through the estuary of that river into the Atlantic. To ascertain the course of this river, and the place of its discharge, have been attempted by many adventurous travellers, the greater part of whom have generally fallen victims to the suspicions of the natives, or the severity of the burning climate. The name of *Niger* is not known in Africa. By the Negroes, it is called *Ioliba*; by the Moors, *Neel Abeede*, or Nile of the Negroes.

The *Congo* or *Zaire*, separates *Congo*, an extensive country of Lower Guinea, from *Loango*, on the north. The soil on the banks of the river is very fertile, but the climate is intensely hot.

AMERICAN RIVERS.

The principal rivers of America are the *Mississippi*, *Missouri*, *St. Lawrence*, *Amazon*, *La Plata*, and *Orinoco*; with some others of less note.

The *Mississippi*, with the *Missouri*, in North America, is, for the length of its course, and the quantity of water it bears into the ocean, one of the largest rivers in the world. This noble river has its source in Upper Red Lake; and is about 4000 miles in length. The *Missouri* river falls into the *Mississippi* a few miles above *St. Louis*; and until *Captains Lewis* and *Clarke* explored it in the years 1804-5-6, it was but little known.

The *Mississippi* is navigable for boats to *St. Anthony's Falls*, about 2400 miles. This river is of great depth, and often flows its banks every spring, and lays the country, for many miles' extent, under water.

The *Missouri* is the great western branch of the *Mississippi*, and is properly considered as the main stream, being much larger than the eastern branch. It is navigable for boats to the *Great Falls*, 3970 miles by the river, from the Gulf of Mexico.

The *Mississippi* rises near the west end of Lake Superior, and flows south. It empties itself into the Gulf of Mexico. The branches of the *Mississippi* are mighty rivers. They are very numerous, and spread out widely from the Alleghany Mountains, on the east, to the Rocky Mountains, on the west. The branches of this river, and of the *Amazon*, hold the second rank among the great rivers of the world. The *Missouri*, from its source in the Rocky Mountains, to the mouth of the *Mississippi*, in the Gulf of Mexico, exceeds 4500 miles.

The *St. Lawrence* issues from Lake Ontario, and is the outlet of the five great lakes, *Superior*, *Huron*, *Michigan*, *Erie*, and *Ontario*. It is navigable for large vessels to *MONTREAL*, 580 miles from the sea. Its general course is from S.W. to N.E. This river ranks among the first in grandeur.

The other large rivers of North America are the *Columbia*, the *Mackenzie*, the *Colorado*, the *Rio del Norte*, the *Nelson*, the *Potomac*, the *Hudson*, &c.

The *Columbia* has its rise in the rocky mountains, and empties itself into the Pacific Ocean, in lat. forty degrees north.

The *Rio del Norte* is a large river of Mexico, and takes its rise in the rocky mountains. Its general course is south-easterly, and falls into the gulf of Mexico. It is about 2,000 miles in length, and is navigable only for 1000.

The river *Mackenzie* empties itself into the Frozen Ocean, in lat. seventy degrees north. This river is the outlet of Slave Lake. Its most distant sources are the rivers *Peace* and *Elk*, which take their rise in the rocky mountains. From Slave Lake to the Ocean, this river is called Mackenzie's river.

The *Nelson* river discharges itself into Hudson's Bay. It is the outlet of Lake Winnipeg. Its most distant branch is *Saskatchewan* river, which rises in the Rocky Mountains, and flows east into Lake Winnipeg. From Lake Winnipeg to Hudson's Bay, it is called Nelson's River.

The *Potomac* is a river of the United States, which rises in two branches, the north and south, originating in and near the Alleghany mountains, and forms, through its whole course, part of the boundary between Virginia and Maryland. It flows into the Chesapeake Bay, and is seven and a half miles wide at its mouth, and one and three-quarters at Alexandria. The termination of the tide is at George Town, about 300 miles from the sea, and the river is navigable for ships of the greatest burden, nearly the whole distance.

The *Colorado* river empties itself into the gulf of Mexico:

The *Ohio* is a large river running along the whole southern border of the state Ohio, a distance of 420 miles, separating that state from Virginia and Kentucky. The *Ohio* is a boundary of five states; the *Delaware* is a boundary of four states; the *Potomac* and the *Savannah* are boundary rivers through their whole source.

The principal rivers of South America, are the *Amazon*, the *Rio de la Plata*, and the *Orinoco*.

The *Amazon* is the largest river in the world, and except the *Missouri*, the longest. It enters the Atlantic under the Equator, by a mouth of 150 miles wide, and the tide flows up 500 miles. All the rivers which rise on the east of the Andes, from lat. two degrees N. to lat. twenty-eight degrees S. are branches of the *Amazon*.

This river is sometimes known by the name *Maranon*, at others, *Orellana*, so called from two of its branches. The chief and largest branch of this river is the *Ucayale*, or *Puro*, and which also contains the largest body of water. The upper part of this branch bears the name *Apurimac*, whose source is in a small lake in the sixteenth degree of south latitude. The *Apurimac* unites with the *Beni* and other streams, which then form the *Ucayale*, which, after a course of 1300 miles in a northern direction, a little inclining to the west, and nearly parallel with the Andes, unites with the *Maranon*, and the western waters; and turning round towards the east, takes the general name and direction of the river. The swellings which come on with the periodical rains are usually very great, and overflow an extensive tract of country for several hundred miles. The *Amazon*, though not so long as the *Mississippi*, or *Missouri*, far exceeds it in the magnitude of its basin, and the volume of its waters; indeed, it far surpasses all other rivers as to extent. This mighty river is navigable for vessels of five hundred tons burthen, from its mouth, to the very foot of the Andes, a distance of about 4000 miles. The mouth of the *Amazon* is so large, that a ship can sail in it without seeing land.

The *Rio de la Plata*, or *River of Silver*, is a name given by the Spaniards to a large river of South America, formed by the *Uruguay* and *Parana*, which unite a little above the city of *Buenos Ayres*. The *Paraguay*, the principal branch of the *Parana*, empties itself into it near *Corrientes*. The *Uruguay* and *Parana*, both rise in Brazil, and flow south-west. The *La Plata* is one hundred

and fifty miles broad at its mouth ; at Monte Video, eighty miles ; and at Buenos Ayres, which lies above two hundred miles from its mouth, it is thirty miles broad.

The Orinoco of South America is a large river that empties itself on the north coast opposite the isle of Trinidad, by fifty mouths. It drains Venezuela, and Spanish Guiana. The Orinoco, like most other large rivers that flow through a flat country, makes its way to the ocean by innumerable channels, and during the rainy season inundates for a great extent the immense plains through which it flows.

The rapidity of rivers is not always in proportion to their fall, or descent, for a broad and comparatively shallow river will not flow with such force as one whose banks confine it to a narrower space; thus, the *Danube* is more rapid than the *Rhine*, although the latter runs down a more inclined declivity. The most rapid streams in Europe are the *Inn* and the *Rhine*; in North America, the *Missouri* and the *Platt*; and in *China*, the *Hoangho*. When the fall of the river is sudden, and its course extremely quick, it forms what is called a *Rapid*; and, when it is thrown suddenly over a rock, it is called a *Fall* or *Cataract*. The quantity of water discharged by any river cannot be calculated, because it must always depend upon the supply it receives, and that supply depends on the quantity of rain, or snow, that may fall upon the adjacent mountains, and on the surrounding country; so that at one time the same river will be full, at another time very low. From some observations on the river *Po*, in *Italy*, it is supposed to supply the sea with 5068 millions of cubical feet of water daily : its stream runs at the rate of four miles an hour, which is not very rapid. The *Thames*, like all other rivers, up which the tide flows to a great distance, is a slow moving current, perhaps scarcely as rapid as the *Po*. It has been reckoned, that all the *rivers* in the World may supply 13,630 *cubical miles of water* to the sea in one year; but, be the quantity more or less, so much must be drawn up by exhalation to form clouds, and to replenish the springs, brooks, and rivers of the Earth. The evaporation of the Mediterranean sea are found to exceed the supply of its contributary streams, by more than double the quantity received from the streams.

One third of that which is exhaled from the Mediterranean sea may fall into it again in showers of rain, and perhaps, a larger quantity into the Atlantic, Indian, and Pacific oceans. That which falls on the land serves to nourish the trees, plants, and general vegetation; and the superabundance again finds its way into the mighty reservoir of the *Globe*.

RIVERS serve many important purposes in the economy of our globe: they fertilize the countries through which they flow; they nourish fishes: they facilitate *COMMERCE*, by affording a ready conveyance for merchandize; and they work the mills, seated on their banks, for grinding corn, heating out bars of iron, slitting into rods, and flattening it into sheets; besides other works of manufactures and mechanism, which are effected by the power of running water. They also greatly beautify the face of the country, add to the pleasantness of the scenes which lie in the valleys before us, soften the prospect by their serpentine windings, give a diversity to the view, and please the eye with the varieties which they effect in the *landscape of NATURE*: they also supply water for various uses, which could not be otherwise obtained in sufficient quantities, and of proper qualities.

There are some streams which dry up during the warm season, and are only filled during the months of winter,

or of rain. Persia produces many examples of this kind.

Many rivers are lost, or disappear in the earth, before they reach any extensive reservoir of water. In some instances they seem to descend into caverns, and rise again at some distance. The *Rhone* is lost in this manner, on the borders of Switzerland, and rises again at the distance of eight hundred feet. The *Guadiana* of Spain is lost for several miles; and many examples of this kind occur in many parts of the world.

Sometimes rivers disappear in consequence of being absorbed by the earth, or evaporated by the heat. In some instances they form small lakes, which have no outlet, and are evaporated in this way. The *Rio dolce*, and other rivers in the *Pampus* of Buenos Ayres, disappear in this manner; and many examples occur in the deserts of Asia and Africa.

Most of the large rivers on the earth are subject to *annual* or *semi-annual floods*, of greater or less extent. The *St. Laurence* of North America is probably the only one which is not effected by rains or drought. Floods are most remarkable and extensive in the *Torrid Zone*; and occur in the rainy season, or soon after. The floods of the *Nile*, the *Ganges*, and the *Mississippi*, rise about thirty feet above the common level. The *Ohio*, and other branches of the *Mississippi*, often rise forty or fifty feet; and the *Orinoco*, from seventy to one hundred and twenty feet. The floods of the *Amazon*, the *Orinoco*, and the *Ganges*, frequently cover the country for one hundred miles in breadth. The floods of rivers are sometimes so very destructive, that they sweep away houses and villages. It was estimated that the flood of the *Ganges*, in 1822, destroyed from 50,000 to 100,000 persons. At the same time they are highly useful, by leaving a deposit of vegetables, mud, or slime, which renders the vales of rivers the most fertile spots on the earth. *Egypt* is entirely dependent on the floods of the *Nile*, for watering as well as fertilizing the lands.

The current of a river is often so powerful that the waters may be distinguished from those of the ocean at a very considerable distance from the shore, especially during a flood; as in the *Amazon* and *Orinoco*. The waters of the *Amazon* are said to remain fresh for two hundred and forty miles from the coast; and *COLOMBUS* found his vessel in the fresh water of the *Orinoco*, before he discovered the continent of South America. In the *Amazon*, the tide is perceived five hundred miles from its mouth, in the *Thames* seventy miles.

OF SPRINGS AND FOUNTAINS.

As there is no effect more visible or more beautiful in nature, than the inexhaustable flux of fountains, and the course of rivers, which roll in pomp and majesty along their plenteous beds for whole ages without control; so there is no effect, the cause whereof nature seems to have concealed from our eyes with greater precaution. In what commodious places are those immense, we had almost said eternal, reservoirs lodged, which, from their secret and inexhaustable stores, supply with ease the capacious beds of Rivers, with such a profusion of water as are more than sufficient to answer all our purposes, and yet are kept under such due restrictions, as not to overflow, but to render the countries fruitful through which they pass?

Though the ALMIGHTY has been pleased to cast a *VFIL* over many things, yet, we are not to imagine, that he has

for that reason forbid our inquiries after them; that veil is not always impenetrable; from whence we may infer, that there is implanted in our natures a thirst after KNOWLEDGE: and as the "handy-works" of our great CREATOR are the just objects of our admiration, though we are perfect strangers to their first principles and most secret causes, so our wonder is still heightened and increased, in proportion to the discovery which we make of the particular structure, contrivance, and grandeur of them. Thus encouraged, therefore, let us endeavour to pry into the secret cause of this perpetual motion. The better we are acquainted with a phenomenon that is for ever subsisting, the more sensible we are of the bonnial benefactions of our CREATOR, which are for ever obvious to our eyes, the stronger will our motives doubtless be to pay him the eternal tribute of gratitude.

Various have been the opinions of philosophers concerning SPRINGS, but those which deserve the most notice are the three following:

I. That the sea-water is conveyed through subterraneous ducts or canals, to the places where the SPRINGS flow out of the EARTH; but as it is impossible that the waters should be thus conveyed to the tops of mountains, since it cannot rise higher than the surface, some have had recourse to subterraneous heats, by which, being rarified, it is supposed to ascend in vapours, through the interior parts of the mountains.

II. Others advance the capillary¹ hypothesis, or suppose the water to rise from the depths of the sea through porous parts of the earth; but they seem to lose sight of one principal property of this attraction; for, though water rise to the top of the tube, it will rise no higher, because it is only by the attraction of the parts above that the fluid rises. Therefore, though the waters of the sea may be drawn into the substances of the earth by attraction, yet it cannot be raised by this means into a cistern or cavity, so as to become the source of SPRINGS; the

III. Hypothesis is that of DR. HALLEY, who supposes the true source of springs to be melted snow, rain-water, dew, and vapours condensed. The Doctor found, that every ten square inches of the surface of the ocean, yield a cubic inch of water in vapour every day; each square mile 6914 tons; and each square degree 33,000,000, of tons. Now, if we suppose the Mediterranean to be forty degrees long, and four broad, its surface will be one hundred and sixty square degrees, from whence there will evaporate 5280 millions of tons per day in the summer time. As to the manner in which these waters are collected, so as to form reservoirs for the different kinds of springs, it seems to be thus:

The tops of mountains, in general, abound with cavities and subterranean caverns formed by NATURE to serve as reservoirs; and their pointed summits, rising into the clouds, attract the vapours of the atmosphere which are in consequence precipitated in water, and by their gravity easily penetrate through beds of sand and lighter earth, till they are stopped in their descent by more dense strata, or beds of clay, stone, &c: where they form a basin or cavern, and working a passage horizontally, issue out at the sides of the mountains.

SPRINGS, which flow perpetually, and without any perceptible diminution or increase of their waters, are called perennial springs; such as run only for a time, and at certain seasons of the year, are called periodical springs. The latter are very numerous in Switzerland, and are sup-

posed to be produced by partial overflows of water from the caves, or natural cisterns in the interior of the mountains, which, when filled, throw off the superfluous water. Some springs are called intermitting, because they flow and stop alternately. Several springs exist in Iceland, from which the water flows only in sudden gushes, a phenomenon probably caused by the action of subterraneous vapours. There are also reciprocating springs, whose waters rise and fall, or flow and ebb, at regular intervals. The spring of Fousanche, in Languedoc, flows every day for above seven hours, and then stops for nearly five hours, rising each day fifty minutes later than the preceding day. The Bullerborn, a fresh water spring in Westphalia, rises with a great noise. There is another at Colmars, in Provence, which stops every seven minutes. This spring was affected by the great earthquake which destroyed Lisbon, in 1755, and changed into a perennial fountain; but, in 1763, it began again to stop at intervals. One of the most remarkable fountains of ancient times was one of which HERODOTUS and DIONYSIUS SICULUS have transmitted an account. It was called the *Fountain of the Sun*, and was situated near the temple of Jupiter Ammon. At the dawn of day this fountain was warm, as the day advanced it became progressively cool, and at noon it was at the extremity of cold; at which time the AMMONITES made use of it to water their gardens and shrubberies. At the setting of the sun, it became again warm, and continued to increase as the evening proceeded, until midnight, when it reached the extremity of heat; as the morning advanced it grew again progressively cold. There was a fountain also equally curious in the Forest of Dodona. It is said to have had the power of lighting a torch. At noon it was dry; at midnight full; from which time it decreased till the following noon. CASHMERE is said to abound with fountains, which the natives call miraculous. PLINY the Younger describes one near the *Larian Lake*, which increased and decreased three times every day. The ancients were never weary of attributing peculiar properties to fountains. That of ARETHUSA was supposed to have the power of forming youth to beauty, and that of CALAPHON, of enabling the priest of the *Clarian Apollo* to foretell future events.

Of medicinal and detrimental fountains, we have many instances vouched by writers, modern as well as ancient. PHILOSTRATUS mentions one that caused the *leprosy*; VITRUVIUS speaks of another, near *Zama*, in Numidia, that gave unusual loudness to the voice: we read of some that caused immediate death; some, the loss of memory, and others, that restored it. Many of them have doubtless a fabulous origin; yet it would be too presuming to doubt the absolute possibility of their existence. PLINY speaks of two fountains, one in JUDEA, the other in AETHIOPIA, which, being impregnated with sulphur, had the property of oil, with respect to burning. The same property is imputed to a river in CILICIA; and a fountain near CARTHAGE, by VITRUVIUS. HERODOTUS relates, that in the country of the *Atlantes*, in Africa, was a hill of salt, on the summit of which bubbled a spring of fresh water. At GUILDFORD, in Connecticut, is a fountain, the water of which will evaporate, if corked in a bottle, ever so securely. Some writers mention one rising in *Mount Soracte*, the waters of which boiled at the rising of the sun.

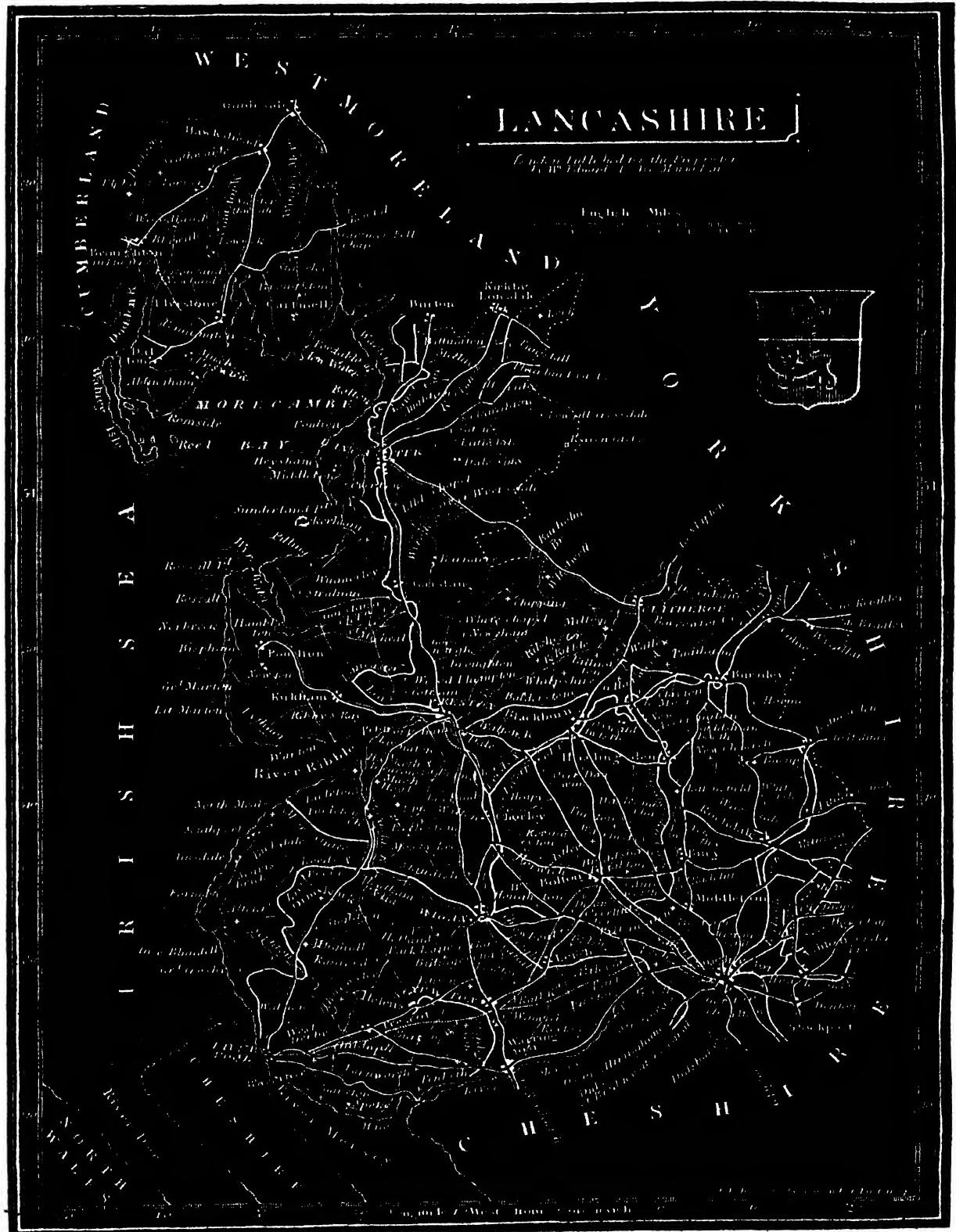
(To be continued.)

* Small tubes.

No. XXXI.

GUIDE TO KNOWLEDGE.

PRICE
ONE PENNY.



LANCASHIRE.

LANCASHIRE is a maritime county in the northern circuit. It takes its name from its chief town, *Lancaster*. Under the BRITONS it formed part of the territory inhabited by the BRIGANTES; but in the time of the Saxon Heptarchy it formed a part of the kingdom of NORTHUMBERLAND. Immediately after the Norman Conquest, it obtained the privileges of a *County Palatinate*, and afterwards the honour of a DUKEDOM annexed to the *Royal Family*.

This county is so irregularly formed, that it is difficult to give its admesurement. Its greatest breadth, however, which is at its end nearest to Cheshire, is about forty miles. The length of the main portion of the county is about sixty miles, but this is exclusive of its hundred, *Furness*, which is a considerable tract, separated from the rest of the county by the broad estuary of an arm of the sea.

To describe this county properly, we must consider it as consisting of three unequal divisions, viz. the hundred of *Furness*, already spoken of, the portion which lies between the *Westmoreland Border* and the *Ribble*, and that which lies between the *Ribble* and the *Mersey*.

The hundred of *Furness* resembles, in its general features, the neighbouring counties of Cumberland and Westmoreland. Like them, its surface has a wild and romantic appearance, and beneath its surface it is very rich in slate and iron ore. Its moors, however, are far from being barren; for, though they are, for the most part, too sterile to admit of being profitably cultivated, they are, to a considerable extent, thickly covered with underwood, of a thick and luxuriant growth. The peasantry of this district annually cut up a vast quantity of the underwood, always having due regard to its age, and convert it into charcoal, which is used in immense quantities in the various iron works in this and the adjoining counties. This manufacture of charcoal, together with a very scanty cultivation of the more fertile patches of ground, forms the chief source of subsistence to the inhabitants of the hundred of *Furness*; who, however, generally speaking, seem to enjoy a very comfortable maintenance. To a few of them, a large lake, called *Coniston Mere*, which waters and beautifies a portion of this hundred, affords great profit. This lake abounds in the delicate fish called *char*, which, when potted, fetches a very high price in the London market. Anciently, there was in the hundred of *Furness* a very beautiful and richly adorned abbey, of which there are still some considerable remains. It is in the immediate vicinity of this abbey that the ground is the most fertile, and the most profitably and industriously cultivated.

Of the other two portions, that which lies between Westmoreland and the Ribble is the most fertile and most beautiful. Some of its scenery is very extensive and romantic, and its cattle are as plentiful as they are excellent and useful.

The portion of Lancashire which lies between the Ribble and the Mersey, in some parts is very fertile, but a very considerable part is taken up by black moors, called the *Mosses*, or *Fells*, and high rugged hills. The natural products of the county beyond those of cattle and oats is chiefly turf, of an excellent quality. There is so much rain, and fogs are so frequent, that wheat cannot be cultivated to any advantage; and even oats, though better adapted to its soil, are only raised to an extent sufficient to support the inhabitants for three months. What is found best to repay the skill and toil of the cultivator, in this county, is that valuable root, the potato. As there is much good grazing land, and as the breed of cattle is remarkably fine, cheese and butter are made here very plentifully, and of superior quality.

The capital of this county, *Lancaster*, is a large and thriving town, in which cotton-goods and sail-cloth are largely manufactured. Its inhabitants are also famous for their skill in cabinet-making and ship-building, of the smaller kinds. But by far the most important towns, as well as the largest, in Lancashire, are *Liverpool* and *Manchester*. The former, in point of commerce, ranks next to *LONDON*, and its merchants trade largely with all parts of the world. The latter is a most populous and wealthy manufacturing town, and is particularly noted for its silk and cotton goods. There are many other manufacturing towns in this county, but our limits are too confined to describe them.

Nowhere has the industry of mankind been more profitably directed than in this county. Nature has made it utterly unfit to excel, or even to support itself, by agricultural enterprise. But, by devoting itself to manufactures, it has raised itself to opulence, and placed all the productions of parts more favoured by nature at the command of its inhabitants.

This county has Westmoreland and Cumberland on its north, Yorkshire on its east, Cheshire on its south, and the Irish Sea on its west. It is separated from Yorkshire by a ridge of mountains called the Backbone of England.

Its chief rivers are the *Mersey*, *Ribble*, *Wire*, *Lune*, and *Ken*. The *Mersey* is noted for smelts, the *Ribble* for flounders and plaice, and the *Lune* for excellent salmon. The *Irk* is a small river that falls into the *Mersey*, and is famous for eels.

The following are its chief towns, together with their population:—

CHIEF TOWNS	POPULATION.	CHIEF TOWNS	POPULATION.
LANCASTER ..	12,613	Wigan.....	20,774
Liverpool	165,175	Blackburn	27,091
Manchester ..	142,026	Bolton-le-Moors	28,299
Salford	40,786	Warrington ...	16,018
Preston	33,172		

Lancaster is a well-built and improving sea-port. Its chief trade is to the West Indies, America, and the Baltic. Its chief exports are hardware, woollen goods, and cabinet work. This town is of very considerable antiquity; and the castle, which is now used as a gaol, is said to have been originally a station formed by the ROMANS. On the top of this castle is a *square tower*, called *JOHN OF GAUNT'S CHAIR*, which commands a beautiful and extensive prospect of the adjacent country and the sea. A variety of Roman coins have been found near it; and below the church, on the steepest side of the hill, hangs a piece of an old *Roman wall*. The town is situated near the mouth of the river *Lune*.

Liverpool, situated on the east side of the *Mersey*, is one of the most flourishing ports in the kingdom. Its inhabitants trade nearly to all parts of the world. The buildings are mostly new, and generally of free-stone, the rest of brick. Its docks are large, and capable of receiving vessels of any burden.

Liverpool is a convincing proof of the consideration in which *trade* ought to be held by every Englishman; for by a proper encouragement of *commerce*, the inhabitants, riches, and extent of this place, are now triple what they were a few years ago. In the middle of the 16th century it was a small village, and inhabited only by a few fishermen, but now contains a population exceeding 165,000 souls.

* For a further account the reader is referred to our 'Picture of the World.'

MANCHESTER, an inland town, is also very populous, and is not less remarkable for its progressive prosperity, which is owing to its manufactures of silk, linen, and cotton goods, which render not only the town, but the country, for many miles round, rich and populous. We must not omit to mention its great antiquity. It was inhabited by the Romans, under the name of *Mancunium*. Many Roman remains are still visible in and about this place. It is now become very large and populous, and its buildings and streets are greatly improved. Including Salford, the population far exceeds that of Liverpool, being, together, 182,812.

PRESTON, a large handsome town, is seated on a most delightful eminence, on the north side of the *Ribble*, over which is a very handsome stone bridge. About seven miles above Preston, was a large town, in the time of the Romans, and, in its prosperity, it was reckoned one of the richest cities in the then known world. The monuments that have been found here are very numerous, which plainly show its former grandeur.

Preston has been the scene of many actions in our civil wars, particularly the defeat of the adherents of the **STUARTS**, in the rebellion of 1715. It is also noted as the birthplace of **SIR RICHARD ARKWRIGHT**, who was born here in 1732. Sir Richard was of mean origin, and at one period of his life was a barber at *Wirksworth*, in Derbyshire, which situation he quitted about the year 1767, and went about the town buying hair. At Warrington he got acquainted with one *Kay*, a clockmaker, and projected with him a machine for spinning cotton; in the perfecting of which they were assisted by Mr. *ATHERTON*, of Liverpool. Mr. Arkwright afterwards went into partnership with Mr. *Smalley*, of Preston, but not succeeding there, they went to Nottingham, and erected a cotton mill, which was worked by horses. He afterwards erected works at Cromford, in Derbyshire, and acquired a fortune of nearly half a million sterling. He was knighted, on presenting an address to his Majesty, in 1786, as High Sheriff of the county of Derby, and died at his seat, in 1792.

Anchor Hill, likewise in the neighbourhood of *Preston*, has afforded much matter of speculation to the curious searchers into antiquity. **Burnley** is also famous for the great variety of ancient coins, found in and near it.

Bolton-in-the-Moors, a large and populous town, is noted for its manufacture of fancy cotton goods. **Warrington**, seated on the *Mersey*, is famous for its manufactures of sail-cloth, sacking, cotton, and glass. Dr. **PERCIVAL**, an eminent physician, and miscellaneous writer, was born here in 1749.

Among other eminent persons of this country, we have to mention **Hugh of Manchester**, a Franciscan Friar, a man of great learning, who lived in the time of Edward I.; **CHARLOTTE**, Countess of Derby, famous for her intrepidity in defending *Lathom House*, for two years, against the Parliament forces, in the Civil Wars; and **GEORGE FOX**, one of the early Quakers, who first appeared in this county, where that sect are still very numerous.

This county sends twenty-six members to Parliament, being thirteen additional for new boroughs, and two additional for the county. The new boroughs are, **Manchester**, **Bolton-in-the-Moors**, **Blackburn**, **Oldham**, **Ashton-under-Line**, **Bury**, **Rochdale**, **Salford**, and **Warrington**. The first four send two members, the others one member each.

OF SPRINGS AND FOUNTAINS.

(Concluded from page 210.)

In **GREENLAND**, most of the springs and fountains rise and fall with the tides. Many in **SPAIN**, in **ENGLAND**, and in **WALES**, have similar periodical returns, and under the rocks of *Giggleswick*, in the west-riding of Yorkshire, there is a *well* that ebbs and flows several times in the course of an hour. When the weather is very wet, or dry, it ceases to flow. A few years ago a *well* near **WIGAN**, in Lancashire, had the property of burning, but ceased to do so after a bed of coals had been removed from the earth beneath it. The cause of this phenomenon was, doubtless, a sulphureous matter issuing from the bitumen, under the source of the spring.

The purity of springs depends upon the nature and extent of the strata through which they pass. The purest and most limpid waters have their sources at a considerable elevation. The common spring-water is usually more or less impregnated with mineral and earthy matters, particularly with gypsum, lime, and saline particles. Those containing a sensible proportion of gaseous or mineral particles, are called mineral springs. They have been divided into four classes; namely,

1st. *Acidulous* waters, or such as are combined with carbonic acid gas, or fixed air.

2d. *Saline*, or such as contain a notable portion of one or more alkaline, or earthy salts.

3d. *Sulphurous*, or *hepatic*, that is, such as are impregnated with sulphuretted hydrogen gas; and

4th. *Martial* or *chalybeate* waters, containing salts of iron.

The temperature of springs, both common and mineral, is commonly subject to the general causes which regulate the heat of the earth; and when the body of water is more considerable, and springs from a great depth, its temperature corresponds with the mean annual temperature of the place of observation. But from this uniformity of temperature many springs exhibit very great deviations, and some even reach the heat of boiling water. The hot springs of *Trinchera*, situated three leagues from *Valencia*, form a rivulet, which, in seasons of the greatest drought, is two feet deep, and eighteen feet wide. Their temperature is 90.3 centigrades, or 195° Fahrenheit; but that of the springs of *Urijino*, in Japan, is 212° of Fahrenheit. Eggs placed in the Trinchera springs are boiled in four minutes. At the distance of forty feet from them are other springs entirely cold. *Rocks* are frequently formed by deposits from the waters of hot springs. The well-known *hot-springs* of **SAN PHILIPPO**, in **Tuscany**, have formed a hill of calcareous tufa, in many places as compact and hard as limestone. The ancient temples, the streets and squares of **ROME**, are built of concretionary masses, some of which, according to **Professor JAMXSON**, have been deposited by springs. Many cold, or common perennial * springs, throw out great quantities of calcareous matter, of which we have an example at *Starlyburn*, in *Fifeshire*. SPRINGS do not freeze, like common rivers or rain-water, for in frosty weather, the heat is concentrated in the *earth*, and gives a degree of constant warmth to the water that passes through its caverns.

In order to explain more particularly the origin of springs and fountains, we must proceed to speak of **MOUNTAINS**, which shall be the subject of a separate chapter.

* Perpetual, unceasing; lasting through the year.

OBSERVATIONS AND REFLECTIONS ON THE BEAUTY AND IMPORTANCE OF RIVERS.

LET us now reflect on the value of WATER, and on the beauty and importance of the RIVERS. What a delightful scene is a soft murmuring stream! Whether we reflect on the gentle motion of its waters, or on the various benefits and advantages arising from it, or use our best endeavours to trace it to its head, we are charmed with its gliding in such beautiful meanders; the numberless accommodations it affords us fill our soul with the most grateful acknowledgment; and our curiosity is excited by the obscurity of its original. Let us consider it in its gradual progression and increase. It is at first nothing more than a vein of water issuing from some hill upon a bed of sand or clay. The little stones that are dispersed all round about are not sufficient to interrupt its current; it turns and winds, and murmurs as it rolls along; at last it clears its way, falls in a torrent down upon the plains, and swells by being united with some other streams; it hollows the ground by the rapidity of its fall, and throws up the earth on each side of it; it insensibly forces its way through every thing that obstructs its passage, and digs a bed or channel for itself; the overflowing of the adjacent ponds, the snow that melts and trickles down the hills, and the additional supplies of various brooks and rills that fall into it, fortify and enrich it: then it assumes a *name*, and makes its course along the sides of flowery meads; it takes a tour all round the HILLS, and graces as it turns and winds, the spacious plains.

It is the general rendezvous of almost all kinds of living creatures: a thousand little party-coloured birds, of various notes, divert themselves upon its sandy banks, skim over its surface, and dip their wings in its refreshing streams. This is their favourite place all day, and, when the approach of night compels them to withdraw, they quit it with reluctance. Then the wild beasts enjoy it in their turn; but, at the break of day, they leave the plains to MAN, and the free use of the rivers to the cattle. The numerous herds forsake their pastures twice a day to pay their usual visits to the streams in which they quench their thirst, or seek some cool retreat. The river is no less delightful to us than it is to them: for the most part, we reject the hills and woods, and fix our habitation on its banks.

When it has enriched the fisherman with a profusion of its stores, and refreshed the farmer's thirsty plains; when it has adorned the pompous seats of the nobility with the most delightful prospects, and made the country in every way agreeable, it pays a visit to those large towns that are indebted to its friendly streams for all their *wealth* and *commerce*.

The principal aim of DIVINE PROVIDENCE, in this act of his indulgence, was, no doubt, to furnish both man and beast with one of the most necessary elements of life; one that will either refresh us when we are faint and thirsty, or serve us to dress our daily provisions, and keep our habitations, as well as our bodies, sweet and wholesome.

Should our readers ask, how this river-water, which carries such a large quantity of filth and mire along with it, from the several places through which it passes, can so purge and refine itself, as to answer, in all respects, the purposes before-mentioned? They will permit us to tell them, that it discharges itself of all impurities of that nature, by gradually throwing them upon its banks as it passes by them; nor do they rest there long, but are either lost and scattered up and down in the air, by the influence or impulse of the wind, or exhaled by the rarefaction of the SUN.

If our river water proves thick and muddy as it sometimes will, by an intermixture of such particles of another nature, as are capable of producing sediments that prove detrimental to health: we generally take care, in that case, to let the water stand for some time in proper vessels, where it will soon settle and become as clear as crystal.

In places where we have not the advantage of river-water, NATURE has made us some compensation by furnishing us with SPRINGS; or, if we are so unhappy as to be destitute even of them, yet we are very sure, on our digging deep enough into the EARTH, that we shall meet with good well-water.

If we inquire which of these three kinds of water is, in general, esteemed the best, we shall soon give the preference to *river-water*, particularly that of large rivers, as it is generally lighter and more wholesome than that which rises either from springs or wells. The constituent parts of a fluid, as that of water, may be compared to those various grains of corn which are thrown into a large mass, or heap. If such corn be moved and stirred about upon a floor that is full of dust, or any other impurities whatever, the whole mass must be inevitably affected by them. If, on the other hand, it be well shovelled, and thrown from one side to the other, upon a floor that is perfectly clean, it will purge itself, and the wind will disperse those heterogeneous particles which had before insinuated themselves into it. In like manner, the water that flows from low springs, or is extracted from wells, having run through, or lain without motion upon beds of slate, chalk, vitriol, sulphur, or iron, washes off some small particles from those various beds, which, if we drink them, may prove very prejudicial to our health. River-water, on the contrary, by running for a considerable time in the open air, through the various meanders of its channels, and by that means being kept in perpetual motion, clears and refines itself from all kinds of impurities. The rapid motion of its stream in the middle drives every thing before it, throwing up on its shores such bodies as are of a grosser quality, namely, gravel, slime, and filth. As for those bituminous, or oily substances that are lighter than itself, they float upon its surface, and constitute a sort of scum or froth, which is easily discovered, and soon exhaled by the rarefaction of the SUN. Thus, river-water is, in all respects, as wholesome; and after it has stood and settled for some time, will be as clear as the crystal spring which issues from the finest rocks.

Though this element is of a very fluid and fugitive nature, yet the power and elasticity of it are such, that it will bear an almost inconceivable burden. Can we behold a loaded barge floating down a river, and not be surprised that such an immense weight should be supported by the water? The specific gravity of wood is less than that of the water, whose place it fills; and not only the *load*, but the air that is in the barge, as also the timber of which the vessel is composed, altogether form a body of less weight than that of the column of water whose place it supplies. This is the true reason why the barge does not sink.

The surprising advantages which accrue to us from hence, are grounded on the proportion that there is between the weight of wood and that of water, insomuch, that not only the vessel, but the freight likewise, is sustained by it. But, how vain and trifling would this philosophy prove, should we sit down contented with the bare discovery of this useful proportion, which these two bodies bear to one another, and not reflect on the Divine Wisdom and indulgence, who has so ordered the nature of things as

to make them all contribute to our convenience and advantage! Though, it must be acknowledged, that this water, of which we stand in such daily need, sometimes overflows our plains, and obstructs our passage, yet can we possibly be so blind as not to discover the indulgent intention of HEAVEN, in furnishing us with wood for the safe transportation of ourselves and effects over it!

Water-carriage is so expeditious and easy, that in many places where NATURE has not furnished the inhabitants with this convenience, they will spare no pains, or cost, whatever to purchase and procure it; they will throw ponds and brooks into one another; they will improve every trifling stream to the best advantage, make basins, reservoirs, and canals, lay vallies under water, cut a passage even through mountains, and, all to procure the nearest communication they can with some river, for the most commodious conveyance of their respective commodities from one town to another; and, as instances of this, we have only to take a view of the several *Maps* of England, Holland and France, in which are shown works of the greatest use and magnificence. Let us only observe, with what success the inhabitants of *Holland* have raised out of a small tract of land, all covered with marshes, one of the most populous and richest states in the whole World. The great number of their artificial canals, which they support and repair with the utmost diligence and precaution, serve to convey or receive those waters, which, without such contrivances, would in a manner cover all the lands. These canals, likewise, are formed into several routes, which are made use of for a communication to several considerable towns that lie within five or six leagues of one another. An inhabitant of *Rotterdam* may set out in the morning, breakfast with his friend at *Delft*, or the *Hague*, and dine at *Leyden*; he may either sup the same day at *Amsterdam*; or if his business will not permit him to proceed, he may return home again before night, and may read and write as commodiously all the time, as if he was in his closet, and that too without being in any way fatigued, or exposed to those dangers which he might possibly meet with on the road. A farmer's wife, in frosty weather, will take her basket upon her head, vend all her little stores at a distant market, and return home in a few minutes. She flies, as it were, upon her skates, and scarcely any of the family can tell that she has been absent. The frost, however, does not obstruct the carriage of their heaviest burdens; their carts and sledges are substituted in the room of boats and barges, and are as fully employed on their canals as in their streets.

In our next number we will take a view of the famous Royal Canal of *Langres* in France, a work of men's hands, which will for ever, at least while this globe shall continue to exist, do honour to the age in which it was accomplished.

MOUNTAINS.

The most considerable elevations of the earth's surface are called MOUNTAINS. *Hills* are distinguished from *mountains*, by their smaller size. A series of mountains or hills connected together by one continuous base, such as the *Andes*, is called a *chain*. A collection of those chains is called a *system*; thus, we say, the *System* of the *Alps*, &c. Mountains present a variety of external forms. Their general shape is conical; that is, they diminish gradually, into a more or less pointed summit. But this ordinary outline assumes various modifications, espe-

cially in very high mountains, which sometimes shoot into the form of enormous crystals, or appear crowned with a vast and rocky battlement, or present a highly fantastic outline of naked rocks, heaped and crowded upon each other in every position. These appearances are called needles, peaks, teeth, domes, forks, horns, &c. according to their supposed resemblances; and this difference of outline is thought by some geologists to indicate a difference also of internal structure and composition. When a mountain rises into two ridges at the summit, with a circular hollow between them, it is said to have a *saddle ridge*. When the highest ridge is divided into a number of distinct teeth, it is called a *serrated ridge*. The deep rugged excavations formed in the sides of mountains, by the descent of streams, are called *ravines*; and the extensive hollows which occur between chains of mountains, are denominated *vallies*. Mountains which rise from the plain, at an angle of about forty-five degrees, are considered as having a gentle inclination; in proportion as the angle exceeds forty-five degrees, the ascent is said to be steep. The greater number of mountains have one of their sides very steep, while the other presents a gradual slope: thus, the *Pyrenees* are much steeper towards the *south* than the *north*; and the *Alps* on the side of Italy, more than that of Switzerland. The cause of this configuration is very obvious; when we reflect that chains of mountains are frequently nothing more than the abrupt borders of highland plains, or plateaus, obliquely inclined to a lower terrace. And hence with most of the chains of the globe, their steepest side is that which approaches to the sea. Thus, the *Himalai Mountains* are steepest on the S.W. sides, which front the Indian plains, and the *Elmoons* are steepest towards the Caspian sea. In general, also, mountains that surround lakes, or basins, present their steepest sides to the water.

A greater or less connexion may always be traced between the chains of mountains in the same country; nay, some connexion may perhaps subsist between the whole *mountain systems* of the globe. Thus, the Uralian mountains, which divide Asia from Europe, and direct one branch towards the White Sea and Nova Zembla, seem connected with the ridge which divides Norway and Sweden from Russia. Another chain stretches out from Northern India to Thibet and Cashmere, where it forms the most elevated region of the whole earth; and runs towards the west through Persia, and eastwards through China. From the highest land of Northern Asia, at the mountains of *Bogdo*, which separate the Calmucks from the Moguls, runs another chain under the name of *Masart*, southward to Thibet. Another goes towards the west, under the name of *Alak*, through the steps of Independent Tartary and Bucaria, and joins the Uralian mountains. A third branch of the *Bogdo*, called *Zangai*, runs eastward through *Mongolian* and *Chinese* Tartary; and forms the *Corea* and the cliffs and islands of Japan. The fourth is the *Altai Mountains*, which bound Siberia from the *Irtysh* to the *Amour*. Between the Caspian and the Black Sea lie the *Caucasian Mountains*. The probable connexion of this with one of the preceding chains, has not yet been traced; but it sends branches through *Asia Minor* to Arabia, which form the *Taurus*, *Mount Sinai*, and *Lebanon*.

Another branch goes round the Black Sea towards Macedonia, where it diverges into a number of chains. The Carpathian Mountains stretch from the Black Sea, between Moldavia, Wallachia, and Transylvania, through Poland and Silesia, and connect themselves with the Ger-

man mountains. The *SUDETIC CHAIN* runs through Austria, between Bohemia and Silesia, and sends some branches N.E. through the *Saxon Erzgebirge*, and the *Voigtland*. The *ALPS* are connected with the neighbouring chains of Germany, Italy, and France; and the *Apennines*, probably, extend under the sea towards the Mountains of Africa, where the larger *ATLAS* may be connected with the Arabian Chain. *SECONDARY CHAINS* run along the banks of the *Nile*, through *Upper Egypt*, *Nubia*, and *Abyssinia*, into the unknown countries of the interior, where they are probably connected with the *Mountains of the Moon*, whence chains may stretch into Southern Africa towards the *Mountains of the Cape*. With the South American Cordilleras, a few secondary chains are connected; and one chain proceeds northward through the Isthmus of Panama, into North America, where it runs along the western coast, and sends several branches into the interior. Future travellers may, perhaps, ascertain that this chain is connected with the mountains of Asia in the highest north.

Some mountains are entirely insulated, that is, are quite remote from any chain, or group; more particularly those of a volcanic origin. The *Rock of Gibraltar*, and the Fortress of *Gwalior*, in Hindostan, are of this description. Sometimes we find these solitary masses exhibiting only an abrupt naked rock; others are covered with beautiful verdure, and slope gently down to the plains.

Many authors have regarded mountains as imperfections in the frame of the Terrestrial Globe; and one of the consequences of that fearful breaking up of the structure of the Globe, which took place at the period of the Deluge. But this opinion seems wholly fanciful. The eternal hills form, as it were, a frame work for the security and consolidation of the softer parts of the Earth, which might otherwise be swept away by the fury of the wind and waters. They are the reservoirs of Rivers, and the store-houses of the richest minerals. They increase the surface, and, in consequence, the productions of the Earth, and give diversity and richness to natural scenery. WOLFFER thinks that mountains preserve the Earth's equilibrium, and the uniformity of its motions; and we know that, in many instances, they have furnished heroic nations with the means of repelling foreign invasion.

The most general and natural division of earthy bodies is founded upon the substances of which they are composed. The Earths are of various kinds, colours, and qualities. The most widely diffused earth, and, in fact, the basis of the whole frame of the *Globe*, is stone of different species. The strata of mould with which the great bed of stone is covered, consists principally of stones, crumbled to powder by the action of the atmosphere, and the elementary remains of plants and animals which have perished upon its surface. The natural fertility of a country depends upon the extent to which this species of soil is found in it. The various species of stone are not thrown together without any principle of order and connexion; they are found occupying certain distinct and relative situations, in which they compose what is called

Strata. WERNER, the celebrated founder of the German *School of MINERALOGY*, of which the principal GEOLOGISTS in Europe are disciples, first explained the laws of stratification, and determined the rules by which the relative age of minerals might be fixed, and their various species traced through all the successive changes which they have undergone. DAUBISSEON, DOLOMIEN, SPALLANZANI, BREISLACK, CORDIER, RAMON, CUIVER, HUTTON, PLAYFAIR, JAMESON, MACCULLOCK, HUMBOLDT, STEPHENS, LEOPOLD VON BUCH, and VON BEAUMER, have since distinguished themselves in

this part of science, and have advanced various new and occasionally conflicting views.

The appearance presented by the mountains and solid parts of the Earth's surface, irresistibly leads us to the conclusion, that in the early ages of the *World* a universal *Deluge* overspread the whole frame of the *Globe*. On no other supposition can we account for those traces of destruction, or agitation by water, which are to be met with in every country; or the situation of those marine productions which we find at the tops of the highest mountains.

The most ancient mountains, or those forming the basis of all the others, are entirely destitute of organic remains and petrifications; and, in all probability, existed before the universal Deluge. They consist of granite, gneiss, mica, slate, primitive limestone, or dolomite, serpentine, primitive clay, slate, syenite, pyrite, porphyry, and quartz. The great bulk of the highest, or primitive mountains, is composed of granite, a mixture of felspar, quartz, and mica, disposed in distinct granular concretions, of various magnitudes and forms. Granite not only forms the most elevated masses on the surface of the globe, but descends into the bowels of the earth, where it is supposed, by some geologists, to form a vast connected vaulting, supporting all the other masses of matter which compose the crust of the globe. It is seldom found in the advanced chains.

The primitive rocks are succeeded by the transition rocks, which do not exhibit any organic remains, but occasionally contain petrifications. To this class of rocks belong clay-slate, floetz-limestone, greenstones, pyrite-slate, grey-wacke, and transition chalk. The inclination of transition strata is always regulated by that of the granite strata on which they rest.

The distinction between primitive and floetz lies partly in their external appearance, the former being high and steep, the latter low and flat; partly in their internal constitution, and partly in the matters of which they are composed; the elder floetz rocks are of higher elevation than the others, and consists of sandstone, breccia, coal, and slate clay, on which the finest impressions of antediluvian plants are perceived. The younger floetz mountains are usually situated at a greater distance from the primitive mountains, and flatten gradually as they recede from the main chain, till they sink into the plain. Their stratas exhibit a species of sand-breccia, of a very regular form, a bituminous marle-slate, with remains of fishes, and many varieties of gypsum and sandstone. The upper strata exhibit gypsum and chalk, intermingled with flints, and petrifications. A remarkable feature in the floetz formation is the transverse veins and galleries which in some instances intersect the stratas. These are sometimes empty, and sometimes filled with fossil substances, and lead, copper, and cobalt ores. In general, the floetz mountains contain mines of copper, slate, alum, vitriol-slate, calamine, naphtha, coal, rock-salt, and salt and warm springs.

ALLUVIAL SOIL.

From the above three classes of formations we must distinguish the very latest which have been produced from partial motions of the fresh waters at the surface of the globe; as, for instance, on the shores of marshes of the Mississippi, the Amabon, and the Nile, or by the gradual deposits from subsiding lakes, of which a singular instance occurs in the parallel roads of *Glen Roy*, in our own country. We also find instances of alluvial deposits, either

from the debris of the cliffs, or from the earthy substances kept in suspension by the waters of the ocean, on the shores of the Baltic, the Mediterranean, and the German Ocean. In these sandy and clayey deposits the bones of various large animals are frequently discovered in a state of calcination, or strongly impregnated with bitumen. Floetz, chalk, and sandstone, occur in alluvium, also pit-coal and argillaceous clay. Alluvial formations are often found covered with insulated blocks of granite, the presence of which cannot easily be accounted for.

VOLCANOES are not so numerous at the present period as they were in former times, traces of them: long since extinguished, may be seen in France and Germany; they are not a class of mountains peculiar to any particular part of the earth; they rise in the midst of primitive or of floetz ridges, as well as in plains, and also break out from unfathomable depths below the sea. The whole chain of mountains which border the Pacific Ocean is crowned by volcanoes, beginning at the Straits of Magellan, with the Andes, which, in Chile, have fifteen burning craters. Those of Peru are very numerous and terrible, as are those of the Isthmus of Mexico and California. In Kamtschatka are several burning mountains. A series of volcanic inlets joins on to the Marianne Isles, which have nine active volcanoes, and thence runs through Polynesia. The Indian Archipelago, New Zealand, and Australia, exhibit signs of subterranean fires. The mineral waters, and confused mountains of the Cape of Good Hope, indicate volcanic effects. The Ionian Isles, in the Adriatic, and those of the Grecian Archipelago, appear to be volcanic; and new islands have been formed in the Mediterranean Sea by eruptions of the volcanic fire. Sicily has its Etna, Naples its Vesuvius, and Stromboli lightens up the Islands of Lipari. The Cape Verde Islands, on the coast of Africa, rest on volcanic matter, of which Fuego throws out flames; in Iceland, Mount Hecla belches out with tremendous fury, and in the Feroe Isles symptoms of the same effects are apparent.

When these fires were kindled, by what sort of fuel they are still maintained, at what depths below the surface of the earth they are placed, whether they have a mutual connexion, and how long they may continue to burn, are questions which do not admit an easy decision. The greater number of volcanoes rise in a cone, their mouth, or crater, has generally the shape of a cap, or an inverted tunnel, but, in some instances, the lava breaks out at the sides. When the fires find no issue, they produce earthquakes. When Vesuvius throws off its inflammable contents by moderate and regular eruptions, the inhabitants of Naples have but little dread of the occurrence of an earthquake: after a long repose, the volcano breaks out with additional force; the extent of its influence is astonishing; that of Tomboras, in one of the islands of the Indian Archipelago, was felt through a circular space of 2000 miles in diameter.

Volcanic productions have been arranged in six classes, viz:—

1st. Opaque lavas, including basalt, remarkable for its regular prismatic forms;

2nd. Porous lavas:

3rd. Vitrified lavas, affording a real opaque glass of a dark colour, known by the name of the Iceland agats;

4th. Pumice stone, a well-known universal specifically lighter than water;

5th. Volcanic ashes, of a clear gray colour, which in the form of powder are called puzzalana, and when congealed together, tufa or trass;

6th. Volcanic breccia, a species of lava, containing a variety of foreign substances. When these volcanic products are reduced to dust, they produce a highly fertile soil. Some species of lava can be wrought into different fancy articles, such as snuff boxes, &c. The common lava is used for paving streets, and for buildings in Italy. Sulphur, and a variety of salts, are produced on the sides of volcanic craters, and in some instances, immense quantities of boiling water are ejected by volcanoes.

Caverns so frequently found in mountains, have been formed by earthquakes, by water, by the middle sinkings of portions of the earth, and by subterraneous fires; they are variously formed, and some of them very deep, even exceeding 1000 feet; others extend horizontally to a great length. The stalactite columns, and curious concretions formed by the dripping of water from their sides and roofs, frequently give much beauty to their interiors; and when illuminated by torch light make a magnificent and dazzling spectacle. Some caverns have streams of water running through them; others emit peculiar vapours; some have clear springs, and others are traversed by winds; curious petrifications, bones, and teeth of animals, have been found in caverns, which must have been long deposited there. The caverns of Castleton, Poole, and Fingal, are the most remarkable in Great Britain. That of Sturth in Ireland; Oimbos in Egypt; Di Cave and Puzzuolo near Naples, those of Mount Pilate in Switzerland; that of the Sorcerers in Cevennes; of Sauseberg, near Basle; of the Dragons in Damstadt; the Labyrinth in Creti; and the Grotto of Antiparos.

Petrifications and fossil remains are found in mountains. The petrifications are organic bodies which have preserved their form, and in the course of time have hardened into stone. They have been found of plants and animals of every description; and though they are more common in some parts than in others, there are few countries without them. Fossil remains of animals, plants, and other substances, are discovered where such things do not now exist in their original state.

Thus the remains of animals of the Torrid Zone have been dug up in northern regions, in which, according to their present habits, they could not now exist. Oyster shells have been found in the Andes, at an elevation of 14,120 feet above the level of the sea. A beautiful fossil of the sea turtle, weighing one hundred and eighty pounds, was recently discovered in a mass of ferruginous limestone, in the stone ridge of Harwich. In Italy they find petrified fishes whose living species is now found only in the seas around Otaheite, and the petrified shells found in England are often such as belong to fishes on the coast of Florida. Fossil human bones have lately been discovered in the caves of Durfort and Konitz; the former in the department of La Guine in France, three hundred feet above the level of the sea, and the latter in Saxony. The remains of the *Mammoth*, a monstrous species of the *Elephant*, have been found in Europe, but principally in Siberia. Rhinoceroses, whales, and elephants, have been discovered in Germany, and on the banks of the Siberian rivers. Such singular and extraordinary circumstances render it difficult to determine the causes that have spread these relics of antiquity so promiscuously over the earth.

A thousand parties of pleasure do not leave a recollection worth that of one good action.

THE
GUIDE TO KNOWLEDGE.

EDITED BY MR. W. PINNOCK,

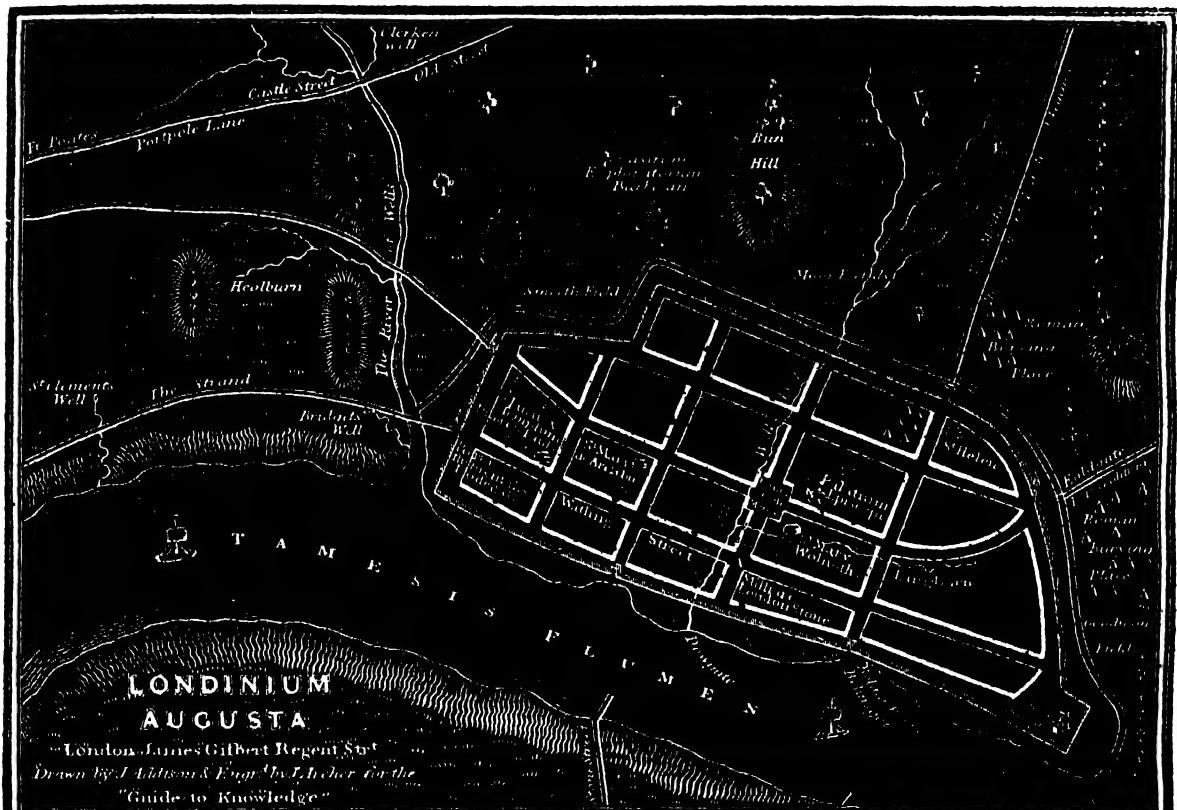
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**PRICE.
ONE PENNY**

MAP OF LONDON IN THE TIME OF THE ROMANS.



A CONCISE ACCOUNT OF LONDON, FROM ITS ORIGIN TO THE PRESENT TIME.

LONDON, the vast and splendid metropolis of ENGLAND, the capital of all the British dominions, and the most renowned city in the whole world, not only for the numbers and wealth of its inhabitants, but their industry, bravery, humanity, and unconquerable love of liberty; its extended commerce to all parts of the GLOBE; its admirable polity, its useful and dignified establishments of learning, as well as trade, and its unrivalled manuactures, its numerous hospitals for the sick, asylums for the orphan, refuge for the wretched and destitute, receptacles for the blind, and the various institutions for reforming the abandoned, and succouring the decayed, form together such a grand and enlivened picture of a people, whose benevolence and acts of charity are so enlarged and dignified, that the pen of the most brilliant writer must fail in doing ample justice to the exalted traits of character which abound in this first of cities.

The origin^s of this celebrated city is involved in great
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obscurity; some historians asserting that it was a *British town* before the arrival of the *ROMANS*; and others, that it was founded by them, and denominated *Colonia Augusta*, or *LONDINIUM*.* Be this as it may, its advan-

- CAMDEN supposes the word *London* to be compounded of the British words *Lwhn*, a wood, and *Dinas* a town; if this be granted, the proper signification of London is a town in a wood. What gives an air of probability to this assertion is, that the Britons formed their towns in the midst of woods, and fortified all the avenues leading to them with felled trees. The same author adds, that this appellation might also be derived from the word *Lhong*, a ship, and *Dinas*, a city, in which sense it will signify a city or harbour for ships. Several other derivations are given by different authors, which, as they are all equally founded on conjecture, the repetition would not only be tedious, but would occupy more space than the limits of our work will admit. It is however certain, that the Romans changed its name to *Augusta*, but this was sometime after lost in that of *Londinium*, or *London*.

tageous situation for trade soon drew to it a considerable number of merchants, and it became a populous and wealthy mart for the productions of many parts of the *World*.

Too great security, however, proved its temporary ruin, for its inhabitants having neglected to enclose it with fortifications, it was easily taken by the numerous, though undisciplined forces of Boadicea, A. D. 64; when the greater part of it was burnt, and the inhabitants massacred.

After the defeat of this heroine, by the Roman forces, the city arose from its ashes, and in the reign of the Emperor Sevius, A. D. 41, increased, as to obtain the nomination of the "Great and wealthy City;" yet, although warned by its former wretched fate, no measures were taken for its security until more than a century afterwards, in the time of Constantine the Great, when it was enclosed with a wall of stone and brick. This wall was upwards of three miles in extent, and was defended on the land side by fifteen towers, some of which remained until within a short period. It had four gates, corresponding with the great military roads.

Very little is known of London from the departure of the Romans until the consolidation of the Kingdoms of the Heptarchy into one, under Egbert, when it became, and has ever since continued, the metropolis of England. In the interval it had greatly increased in extent and wealth, commerce having for many ages been successfully carried on. But its prosperity exposed it once more to devastation and ruin; the Danes, attracted by its wealth and almost defenceless state, sailed up the Thames with a powerful fleet, and again the streets of this proud city were stained with the blood of its inhabitants, and nearly all its buildings reduced to ashes. Two years after they returned to finish the work of destruction, and to carry off whatever might have escaped their hands on their former visit; but happily, their wicked designs were defeated, and their forces nearly cut to pieces by the brave Ethelwolf and his son, Ethelred.

These desperate marauders, however, had tasted the sweets of plunder; and the beast of prey that has once bathed his jaws in human gore, can seldom be deterred from attacking man, they continued their predatory incursions, and some had even the audacity to settle there when the city had once more recovered, in some degree, from its disasters.

On the accession of Alfred to the crown, he turned his attention to the enlargement and improvement of London; and that no treacherous enemy within might aid an invader from without, he drove out the Danes, rebuked them, and adopted many wise measures for the security and embellishment of the city.

Yet we must form our idea of London as it existed in the reigns of our early kings from the seen it now presents to our view, instead of stately palaces, elegant churches, spacious squares, and regular streets, of lofty and commodious houses extending over an immense surface, displaying the wealth collected from all parts of the globe, and thronged with splendid equipages, we must figure to ourselves narrow, crooked, and unpaved lanes, of lowly cottages constructed chiefly of timber, and covered with thatch.

True it is, that this description agrees but ill with the accounts left by our ancient historians of its grandeur and beauty. But we must bear in mind, that things are great or little by comparison. Contrasted with the rude huts and the hovels of their Saxon successors, scattered over the country, the timber edifices of London wore an air of

superiority that justified the then opinion; but if brought in competition with London in the present age, how vast the disparity; the former beauty was but deformity, its grandeur insignificance.

The materials of which most of the buildings of London were constructed contributed greatly to the calamities, and yet to the ultimate advantage of the city. Frequent fires occurred, which, meeting with little to check and much to impede their progress, made great ravages.

Sixty, however, of these events were to those whose property was consumed, a loss; relatives or friends had been a prey to the devouring element, they protracted public benefits, by affording opportunities for rebuilding in a more commodious manner, and in a better style of architecture. Accordingly, they produced this effect, though very slowly; and it was not till after the great fire of 1666, that London at all approximated to its present convenience, regularity, and beauty.

The first calamity on record of this kind of any importance, occurred in the year 1077, in the reign of William the Conqueror, which laid nearly the whole city in ashes.

Scarcely had it recovered from this visitation, than it experienced the ravages of another fire in 1086, which not only destroyed the best and most opulent part, but consumed likewise the Cathedral of St. Paul's. By the munificence of the king, however, and the contributions of the pious, this sacred edifice was rebuilt much more magnificently than before.

From this time, through a long series of years, London experienced great vicissitudes; sometimes highly favoured, and at others dreadfully oppressed by its monarchs, and men in power. Weak and needy princes frequently extorted large sums of money from the citizens to supply their extravagance, while prudent and wise sovereigns endeavoured to promote the prosperity of the metropolis, well aware, not only that their own depended much on the love and esteem of their subjects, but that the welfare of the whole kingdom was intimately connected with that of its capital.

Yet, notwithstanding the frequent improvements made in this city after every destructive fire, it still continued so confined and dirty as to be a very insalubrious residence; diseases frequently made great ravages amongst the inhabitants; the most celebrated instance of which occurred in 1665, in the reign of Charles II.

About the close of 1664 two or three persons died of the Plague in Westminster, which caused great alarm; but as nothing further of any consequence occurred during the winter, this alarm gradually subsided.

In the spring, however, it began to appear, and as the warmth of the weather increased, victims increased in proportion. In July, August, and September, its fury was at its height, and it is calculated that above 100,000 persons fell victims to it in London alone. The city was nearly deserted, and grass grew in its streets. Scarcely a sound was to be heard in its once busy haunts, except the rumbling of the carts destined to convey the bodies to the receptacles provided for them, and the melancholy cry of their drivers, "Bring out your dead." The approach of winter checked its progress, until it gradually disappeared as the cold increased.

In a short time, almost all traces of this terrible desolation were obliterated, by great accessions of inhabitants from the country, when another calamity took place, almost unparalleled in the history of the world, for the extent and magnitude of the loss, and yet ultimately, one of the greatest blessings this celebrated city could possibly have experienced. This was a tremendous fire which broke out

September 2d, 1666, and continued raging with great fury for five days, presenting one vast conflagration of many miles in extent, the flames and smoke of which seemed to soar to the clouds, and cast a lurid light on objects around to a great distance.

The fire is said to have commenced in a baker's shop in Pudding-lane, near East Cheap, and after burning the time above mentioned, it was stopped at Pie Corner Smithfield. Notwithstanding the great extent of the dreadful fire, it is said that not more than eight or ten persons perished in consequence of the conflagration, but the destruction of property was immense, and computed a near eight millions of money. London before the great fire was remarkably unhealthy, owing principally, it is supposed, to the narrowness of the streets, and the very great projections of the houses at that time; insomuch that the air was confined too long, and added to its no having a good supply of water, occasioned so frequently those pestilential vapours which produced the plague and other dreadful diseases, so terrible in consequences and prejudicial to the health of the inhabitants.

To this terrible visitation the magnificent cathedral of St. Paul's fell a sacrifice, above 100 churches, many palaces and public buildings, and more than 13,000

The loss of property in furniture, merchandise, &c., was imm
in the ravaged town. Yet
tively short time, the city rose like a phoenix
more elegant and splendid than before; the
houses were built more spacious and convenient, the streets
more spacious and airy, and in a more
more chaste and refined style of architecture, and the highways were rendered safe by a pavement
granite. Yet, though London assumed an appear-

ance infinitely superior to any thing it could boast before this awful visitation of Providence, and in consequence the health and comfort of its citizens were proportionally improved, its moral and political condition was dreadfully deteriorated; from the extravagance that reigned at court, greater supplies of money were continually needed than could be provided in the regular way ordained by parliament, and in consequence, arbitrary exactions on the city of London were had recourse to, and its privileges invaded in the most tyrannical manner, if they were not readily complied with. The arbitrary measures of the court were, however, carried to a greater length than high-spirited Englishmen durst. The Revolution

London regained all her rights and privileges, which she has retained without molestation ever since.

London is admirably situated as it respects the salubrity of the city; the ground rises gently from the river Thames, thus affording an opportunity for casting off its superfluous waters and filth into the common receptacle. The soil likewise is gravelly, excepting on the south side of the river, where it has been greatly improved by draining. Including the out-parishes, it is about 30 miles in circuit, and covers an area of nearly 20,000 acres. However greatly London was improved in the disposition of its streets, and the convenience of its buildings after the great fire, it could not compete with many of the great capitals of Europe in magnificence and beauty. It possessed several edifices which did credit to the national taste and magnificence, but their effect was destroyed, either by the badness of the approaches, or by the buildings which surrounded them. The royal palaces were inferior in grandeur to many of the residences of the nobility; and some of the

public offices were inconvenient, and far from being ornaments to the city. But during the reign of our late Majesty, GEORGE IV., London rapidly approximated in beauty to the most splendid cities in the world. A palace worthy the residence of the monarch of the British Empire occupies the site of the plain brick building, once the favourite residence of George III. A triumphal arch, of exquisite proportions and magnificent architecture, forms the approach to it, while opposite is a plainer, but not less beautiful, entrance to Hyde Park.

Emulous of following the example of their sovereign, many opulent noblemen have expended vast sums in erecting new or altering their old mansions in the most costly style. Whole streets of grand spacious houses have been constructed, chiefly occupied by tradesmen of the highest class, whose valuable wares make a splendid show, and give a high idea of the wealth and refinement of this wonderful city.

Among the newly-erected public offices, which are truly ornamental, may be reckoned the *Treasury*, the *Post Office*, the *Custom House*, the *Mint*, &c. But the exquisitely beautiful Regent's Park, with its majestic Coliseum, its rows of palaces, its Zoological Gardens, its Drama, and many other interesting structures, must not be forgotten, nor those stupendous works of art, the new Docks, the new Bridges, the Tunnel under the Thames, a vast work, which, though suspended for the present, it is to be hoped will be resumed and perfected, for the honour of the British Empire, and the advantage of its metropolis.

The irregular form of London makes it difficult to ascertain its extent. Its length, from east to west, is about eight miles; and its breadth, from north to south, is from two to four miles. Its circumference, as before observed, is about thirty miles. Its population is about 1,500,000.

London, in its most extensive sense, comprises the *Metropolis* properly so called, the *City of Westminster*, the *Boroughs of Southwark, Lambeth, Mary-le-bonne, Finsbury*, and the *Tower Hamlets*, together with a part of Middlesex; but though all these are included under one general name, they have each its separate and proper government.

London may be said to be divided into three grand divisions, of which the manners, taste, and appearance speak for themselves, and are wholly different, independent of a variety of minor subdivisions. The *West End* of the town as it is usually called, is principally devoted to the residences of the nobility and gentry, and many of whom, may truly be said, from their magnificence, to be princely. Fashion, elegance, and splendour, dazzle the eyes of the spectator; and the throng of equipages of the most exquisite taste and workmanship, which are continually seen in this part, and the well-dressed persons promenading in the public streets, display such an abundance of wealth, as to create the most lively and interesting astonishment.

The *City of London*, from its great bustle and activity in trade and commerce, and the hurry which seems to pervade each person in the streets to prosecute his business, makes a strong impression upon the mind of the stranger, particularly, if chance directs him to view the various departments of the Bank, the amazing concerns of which employ nearly a thousand persons; or, in walking round the Royal Exchange, where he may hear all the languages of Europe spoken, and give him some idea of the intercourse which exists between England and foreign nations, and of the great and extensive commerce of this mighty country. It

is pleasing to observe the ease and facility with which business is transacted upon this little spot, by natives from all parts of the globe; and here the importance and integrity of the British merchants' character stands unrivalled, surrounded by groups of *Frenchmen, Germans, Dutch, Danes, Swedes, Spaniards, Portuguese, Americans, Jews, &c.*, respected and admired by them all. The surprising trade of the East India Company, by whom thousands of men are daily employed; the numerous banking and merchants' houses, besides the other public establishments which adorn this ancient city; added to that grand emporium of commerce, the *Custom House*, whose vast exports and imports are far beyond those of any other country in the world.

The *East End* forms a scene so interesting in itself, and in which the poet, the painter, and the sculptor, have exerted their happiest efforts to portray; and without such division, the "*Picture of the Metropolis*" would not only be rendered incomplete, but insignificant and unimportant in its effect. If the manners of the inhabitants of *Wapping*, by their immediate intercourse with the hardy and unsophisticated sons of *Nature*, the tars of Old England (whose principal residence when on shore, is in this part of London), became a subject for comparison between the genteel, industrious, well-informed citizen, and the finished gentleman of the west end of the town, the contrast must prove a fine one: it discovers the union to be complete, shows the *basis* to be composed of sound and imperishable materials, on which this country stands unrivalled in its aspect to all the world, impartial in its practice, permanent in its obligations, and cemented on the immutable principles of *LIBERTY*. The light and shade upon the canvass are strong and imposing; and the various tints and hues exhibited throughout its various parts, give such a strength and harmony to the whole, that renders the excellency of the subject a masterpiece of composition.

The peer and the gentleman, in contemplating the claims of the sailor, exhibit their respect and gratitude to his exertions as the *main-stay* of the country; the merchant hails him as the source from whence his wealth is derived and secured; and the people, in the aggregate, by whom the true courage and humanity of the English nation is preserved, and so much admired. The merchants and tradesmen form a most interesting group in society, by their exertions and enterprise in promoting the manufactures of their native land, and procuring employment for hundreds of thousands of their countrymen, and furthering the riches of the state, enriched by the integrity of disposition, and liberality of conduct. The multitudes of distinguished citizens, the myriads of ingenious mechanics, and the universal display of industry in the minor ranks of the population, exhibit such a combination of talent, intellect, and strength, as never can be diminished, while the life of the lowest is as much under the protection of the *LAW*, as the highest subject in the kingdom;—whose rights and privileges cannot be trampled upon with impunity; and who, together, form the links of one grand, correspondent, and indissoluble chain, that must ever bind them in union, like the *Bees of one Hive*, so naturally and emphatically described in the words of our immortal bard.

"So work the honey bees;
Creatures, that by a ruling nature teach
The art of order to a peopled kingdom;
They have a king and officers of state,
Where some, like magistrates, correct at home;
Others, like merchants, venture trade abroad:

Others, like soldiers, armed in their stings,
Make boot upon the summer's velvet buds;
Which pillage they with merry march bring home
To the tent royal of their emperor:
Who, buried in his majesty, surveys
The singing mason, building roofs of gold:
The civil citizens hoarding up the honey
The poor mechanic porters crowding in
Their heavy burdens at his narrow gate:
The sad-eyed justice, with his surly hum,
Delivering o'er to executors pale,
The lazy, yawning drone."

In describing the two other divisions of the metropolis, the *West End*, most undoubtedly, proves a dazzling species of attraction, and operates strongly upon the senses, by the riches and grandeur which present themselves to public view;—the stately mansions of the peers, the interior of whose houses, in many instances, vie with palaces: the noble residences of the senators, and the elegant habitations of the gentry and merchants, at whose tables the luxuries from all parts of the world are seen and enjoyed: the solidity, integrity, and immense transactions carried on in the *City*, impresses by its sterling importance, and consolidates by its almost inexhaustible stores of merchandise, wealth, and private property; where there are individuals richer than dukes, whose word has been of more value than even kings, or princes; and possessing characters, in a commercial and national point of view, standing on an eminence lofty indeed; but in viewing the *East-End*, the mind becomes exalted and refined, the feelings are enriched with honest pride and laudable ambition, in beholding the very source from which the two other parts of the metropolis receive their support.

A person viewing *London*, and unaccustomed to the sight, can yet behold without surprise the vast number of boats and barges, both of pleasure and burden, above *London bridge*, continually passing and repassing, for the convenience and supply of this city, and the towns on the banks of the *Thames*; nor is it possible to observe without astonishment the vast fleets which constantly appear below bridge, carrying away the manufactures of Britain, and bringing back the produce of the whole Earth.

London may challenge all the world for the accommodation it offers to all ranks and degrees of people, and in no place can money be laid out to so much advantage, either in articles of luxury, necessity, nature, or of art. Markets that may proudly challenge competition, and where the necessities of life are to be purchased at a much cheaper rate, than on the spot from whence they were grown and reared. The supplies are so very abundant, that every thing wanted is procured with the greatest ease. Artificial scarcities have been at times created by designing men to increase their fortunes; but in the worst of times, if the price demanded is agreed to, there is no real want experienced of provisions.

The principal distinguished streets of this great metropolis for retail trade, assume such an aspect of wealth and dazzling splendour, that is truly surprising. The interior of many of the shops display a profusion of taste and elegance which can scarcely be credited, and the articles exposed for sale, in general, are of the most finished and unrivalled workmanship.

Hitherto, the brilliant and shining parts of the picture have only been looked upon and admired; but, however dark and shaded the back ground may appear, we must not be deterred from examining into its peculiar merits with spirit and truth.

In contemplating the vast extent of the metropolis, the candid observer, in justly appreciating the various degrees of comparison that must unavoidably attach to such a phalanx of human beings, some little strength of mind is necessary not to be hurried away by the fascinating glare on the one part of the inhabitants by their riches, grandeur, and exemplary conduct in society; nor prejudiced too strongly against the other, from the lamentable catalogue of human depravity exhibited in London; more especially, when it is recollectcd, that it is not only the grand dépôt of England, but a general receptacle from almost every other country, independent of the vast accumulation from all parts of the British nation, of the idle, depraved, and dishonest—the very centre of temptation, and resources for destructive pleasures, gambling, depredation, and fraud, as well as being distinguished for its honest industry, far exceeding every other situation; its numerous amusements, the mirror of fashion, extravagance, dissipation, and folly, opening an unbounded field for the exercise of the talents of the patriot, the virtues of the philanthropist, and the moral and pious duties of the religionist; operating by their powerful examples in extending the love of country, improving its prosperity, and establishing its fame on the sound and unalterable basis of principle, morality, and good order.

To particularize every thing remarkable in this great metropolis would greatly exceed the limits of our work; we shall therefore confine ourselves to the principal only, and refer the reader to our "*Picture of the World*," a work now in the press, and which will be shortly published. Among the most distinguished buildings are the following.

ST. PAUL'S CATHEDRAL, which may be called the chief ornament of London, is one of the most august pieces of architecture in the world. The original Cathedral is supposed to have been founded by King Ethelbert, in the year 610, which, in succeeding reigns, sustained many accidents and alterations, and was finally destroyed by the great fire in London, in 1666. The first stone of the present Cathedral was laid in 1675, by that celebrated architect, SIR CHRISTOPHER WREN, after whose plan the whole structure was finished in 1710, and cost upwards of 736,000*l.*, exclusive of the iron balustrades, which cost 11,202*l.* The Tower affords several very entertaining amusements, as the Armoury, in which arms for 200,000 men are placed in beautiful disposition, and kept in excellent order; the Crown Jewels, the Records, &c. The Tower was formerly a royal palace, but is now the chief fortress of the city. It is supposed to have been founded by William the Conqueror, about the year 1076. In the Tower are deposited the remains of the Spanish Invincible Armada. WESTMINSTER ABBEY is said to have been founded about the year 610, by SIRBERT, king of the East Saxons, on the ruins of the Temple of Apollo, which is said to have been thrown down by an earthquake. The king dedicated his new church to St. Peter. The interior architecture of this church is considered among the finest in the world. The ceremony of crowning the kings and queens of England is performed here. That which next merits our notice is SR. JAMES'S PALACE, the external appearance of which is far from being handsome. It is built with brick, and though there is nothing very superb or grand in the decorations or furniture of the state apartments, they are commodious and elegant. The sole use of this Palace is for the purposes of state.

(To be continued.)

NATURAL HISTORY OF THE SALMON AND THE TROUT.

LINNEUS, in his system of Nature, has divided Fishes into four ORDERS, the distinctive character of which is the absence or position of a pair of fins, which, in his arrangement, he considers as *feet*. These characteristics, or distinguishing fins, are placed, in those fishes that are provided with them, either *before*, *under*, or *behind* the pectoral or *breast* fins; which last, as their name denotes, are always placed a little behind the gills, and almost universally nearer the line of the belly than the back. The distinguishing fins are called, from their situation, *ventral*; from the Latin word *venter*, the belly; and a small number of fishes have only one. The fins behind the vent are called *anal*, or *vent* fins; those on the back *dorsal*; and that which is in general conversation and writing called the tail, is, by naturalists, termed the *caudal* fin; from the Latin, *cauda*, a tail.



SALMON AND TROUT.

The following are the Linnean orders, and as the specimens referred to, as exhibiting the distinctions of each, are of common occurrence in our markets, almost every fishmonger's shop at this period affords the young student an opportunity of verifying the characters from actual observation.

1. **APODUS**; from two Greek words, signifying without feet. Fishes without ventral fins; as the common and the conger eel.

2. **JUGULARES**; from the Latin, *jugulum*, the throat. Fishes with the ventral fins placed *before* the pectoral, and as it were on the throat; as the cod, the haddock, and the whiting. None of our river and fresh-water fish belong to this order.

3. **THORACCI**; from the Latin, *thorax*, the chest. Fishes, with the ventral fins placed *under* the pectoral or nearly so, and as it were on the chest or cavity of the stomach; as the perch, the miller's thumb, and the John Dory. The ludicrous name of this last fish is probably from the French, *jaune dorée*—golden-yellow. The most of the sea-fish brought to our markets are of this order.

4. **ABDOMINALES**; from the Latin, *abdomen*, the lower belly. Fishes, whose ventral fins are placed *behind* the pectoral, on the lower part of the belly, a little before the vent; as the herring, the pike, the roach, and the salmon. The greater number of our river and fresh-water fish belong to this order.

Each of these primary orders is again subdivided into *genera* or *tribes*; each tribe into *species* or *families*, and each family into *sections* or *varieties*, the characteristic

distinguishing marks becoming more limited, as we descend, and more minutely descriptive of the individual.

The GENUS *Salmo*, or salmon tribe—an account of two of the principal species of which is more especially the subject of this paper—belongs, as has been observed above, to the order of Ablominales. The generic character, or distinguishing mark of the tribe, consists in having eight fins, two of which are on the back; that above the tail, usually called the mort or dead fin, fleshy, and without spines. Of the others, the pectoral and ventral fins are in pairs; the anal and caudal single. The following are the principal species which are found in the lakes and rivers of Great Britain:

1. *Salmo Salar*. The Salmon Proper.
2. — *Eriox*. The Grey or Sheevin.
3. — *Hucho*. The Bull-trout.
4. — *Trutta*. The Salmon-trout.
5. — *Fario*. The Common-trout.
6. — *Salmulus*. The Smelt, Brandling or
7. — *Albus*. The Whiting.
8. — *Alpinus*. The Char.
9. — *Thymallus*. The Grayling.
10. — *Albula*. The Invangis.
11. — *Lavaretus*. The Guinaid.
12. — *Eperlanus*. The Sperling or Smelt.

Of the above, the Guinaid and the Invangis, are mostly found in lakes in elevated situations among the hills of Wales and Scotland; and the char is considered peculiar to the lakes of Windermere, Conistone, and Buttermere, in the counties of Westmoreland, Lancashire, and Cumberland. Grey or Sheevin is chiefly confined to the northern rivers of Scotland; and the grayling, which is rather a scarce species, is not met with north of Yorkshire. The bull-trout, which is not easily distinguished from the salmon-trout, is mostly taken in the Coqu in Northumberland, and in the rivers on the eastern coast of Scotland; and the whiting is most common in the rivers that run into the Solway Firth, which, on the west, borders, separates Cumberland from Dumfrieshire. The Smelt is perhaps more abundant in the Humber than in any other river in Britain.

The *Salmo Salar*, or Salmon Proper, is one of the most delicate fish for the table that is taken in our rivers, and decidedly the most valuable as an article of food, and the most important as a subject of commerce. Until they have attained the weight of seven pounds, which is not before their second year, they are in the northern parts of Great Britain, termed gilts or grillets, and botchers on the Severn and the Wye. The greater number of salmon caught, are from twenty-eight to thirty-eight inches long; from fourteen to twenty inches in girth, where broadest, and weighing from nine to twenty-two pounds. Salmon have been caught from fifty to sixty pounds, but such are of unusual occurrence; and one of the largest that the writer ever saw was caught in the Tyne, and weighed forty-eight pounds. Such as are upwards of twenty-two pounds, do not amount to one-sixth of the average number caught. The head of the salmon is smooth and compressed, with the extremity of the upper jaw slightly projecting over the under. The mouth is large compared with the size of the head, and the teeth are placed both in the jaws and on the tongue. The back is very slightly curved, and the lateral line, which may be observed in most fish running from the upper part of the opening of the gills to the tail, is straight. The opercula, or horny coverings of the gills, consist of three laminae or plates, and the membrane attached to their outer extremity, and which is in common language

called the gill-flap, has from four to ten rays. The rays, or spines, which serve to keep the fins extended like the ribs of a fan, are fourteen in the pectoral, and thirteen in the anal fins. In the others they need not be noticed, as they are sometimes found to vary, and are not considered as characteristic of the species. The colour of the salmon is, on the back, of a bluish black, becoming gradually softened on the sides to a bright leaden colour, and a silvery gray. The belly is of a delicate white, and the sides are marked with spots of brown-black. In the spawning season, the males are provided with a sort of bony hook, or gib, as it is mostly called, growing upwards from the extremity of the lower jaw. In some salmon this gib has been observed so large as to have penetrated the upper jaw, and occasioned the death of the fish. Though the salmon, in ascending rivers, will rise at an artificial fly, no description of food has ever been observed in the stomach, except when caught near the mouth of rivers, when it is sometimes found gorged with sand-eels.

In the evidence given before the committee of the House of Commons, appointed in 1824 and 1825, to inquire into the state of the salmon fisheries of Great Britain and Ireland; it is surprising to observe the difference of opinion amongst persons professing to derive their knowledge from observation and experience. Sir George MacKenzie, and the greater number of those who were examined on this point, believe, that salmon, impelled by a peculiar instinct, always return to the river in which they were spawned; and their opinions are corroborated by the fact of two adjacent rivers, or even two branches of a large river, having invariably maintained salmon of two distinct varieties, differing from each other in colour, form, weight, and general appearance. This is again contradicted by the Rev. Dr Fleming, who appears rather more confident in making assertions, than able in alleging facts to support them. One practical fisherman states, that at whatever period of the year salmon ascend a river, they never return to the sea until they have spawned; and another, with the same means of observation, gives evidence directly the contrary. One professes to consider angling as one great cause of the decrease of salmon, and another declares it to be of too little consequence to deserve notice. Sir Humphrey Davy, who professed to have great knowledge on the subject of salmon fishing, sent a paper to the committee, advising the prohibition of stake-nets, as being particularly injurious to the breed of salmon; and direct, and positive evidence is given in the succeeding session, that salmon full of spawn and the young fry—the two descriptions which are especially the objects of preservation—are never taken in such nets, while Mr. Moin, a practical fisherman, considers that the late President of the Royal Society knew nothing about the matter, and that he had not even seen a stake-net.

Perhaps, the most remarkable part of the evidence as coming from a man of science, is that of the Rev. Dr. Fleming, where he informs the committee that the salmon is a sea-fish, and where to give a colour to his assertion he gives his own definition of a river, according to which it is incorrect to speak of the river Thames at London, the river Tweed at Berwick, or the river Tyne at Newcastle. When the Rev. Dr's. definition of a river is generally received, his account of the salmon being a sea-fish may be admitted as correct; but it surely would have been more desirable to lovers of natural history, and more befitting the spirit of philosophic inquiry, had he produced facts tending to show the period that salmon continues in the sea, instead of attempting to sup-

port his paradoxical assertion by a verbal quibble. Granting the salmon to be a sea-fish, on the ground of its passing at least six months of the year there, yet not even the shadow of a proof is adduced in support of this opinion; but on the contrary, the admissions of Dr. Fleming himself clearly show that this sea-fish, which is bred in our rivers, also lives there upwards of six months out of the twelve. He admits that two or three months may elapse before the *kelts*, or fish that have spawned, return to the sea again; and that salmon appear to require a residence of a few months in a river previous to spawning. How many months the Dr. intended to express by a few we must guess; and thus taking it to mean three, and the medium of the kelts returning, at two months and a half, we

months and a half for the period of the salmon's *ence* in a river, in a comparatively foul state and when for so— and if we only allow six weeks for the *ence* of the clean and wholesome fish, which are the greatest abundance in May, June, and July, ch are frequently caught in considerable numbers h and April—we have thus *seven* months out of ✓, at the lowest estimate, for the residence of this sh in our rivers.

In September, Salmon begin to ascend towards the rivers for the purpose of depositing their spawn, continue pressing forward during October and November, availing themselves of the gushes or floods to over falls and ledges of rock, which in a low state water they are unable to surmount. When above swvly salmon mostly swim in the middle of the keeping near to the bottom, and seldom approach shore; and the manner in which they make their onset the strongest currents, and spring over rocks, nd water, several feet high, is truly surprising, and really fail to excite the admiration of every reflect- at the wisdom of Providence, in adapting the n the end. Having advanced so far up that some- nte is scarcely water sufficient to cover them, the female proceed to form a trench or furrow in the reception of the spawn, hollowing it out with nts and shoulders to the length of eight or ten tantly working against the stream. Should the upper to be taken at this season, the female seeks mate; and poachers who are aware of this fact, hen they have disengaged a pair at work, are said to spare ie female, that she may seek another mate, and thus the another prey. As the ova of the female—

which are, at the time of spawning in December and January, about the size of a pea, are excluded singly, and amount to about 17,000; their exclusion occupies several days. When they are discharged they are carefully covered up with gravel, in order to protect them from the fish and water birds by which they are destroyed. Although Salmon are generally considered as spawning in December and January, yet a considerable number of unspawned fish are found in February, and some so late as the middle of March; but whether such fish discharge their spawn that season or not, is uncertain. For a month or six weeks after spawning, salmon are weak and sickly, sometimes scarcely capable of action, and almost carried as the current drives. Their flesh is at this period hard and unpleasant when dressed, and their lean and flaccid appearance sufficiently indicates their unfitness as food.

From the 1st to the 15th of March, the young fry become quickened and ascend to the surface, sometimes with a part of the *pea*, as the ovum or egg is mostly called by fishermen, still adhering to them. At first they keep near

the shores, gradually descending the river during the month of April, at which time they are called smouts, and are from three to three and a half inches long, and by the first floods in May, they are generally carried out to sea, which is about the time that the female salmon, which have spawned, wholly disappear the males generally preceding them by a fortnight. Towards the latter end of June, a few of the young salmon again return to the rivers, increasing in number and size during July and August, when they are taken in greatest quantities, weighing from three to six pounds. They are now termed gilses, grilses, or botchars; and it appears to be ascertained by observation and experiment, that salmon in the grilse state are capable of breeding; a fact which has caused many persons to consider the latter as a distinct species, grounding their conclusions on a comparison with land animals which mostly arrive at their full growth, or nearly, before they begin to breed. With respect to the age at which fish arrive at their full growth, we have still much to learn, and time, as well as observation, is required for the solution of the question.

Salmon on first arriving from the sea are frequently found infested by insects, called by fishermen sea-lice, which adhere to their sides, but fall off after the fish have been a short time in the fresh water. An insect resembling a maggot is also often found in the gills of kelts, or sick fish that have lately spawned, and sometimes those organs are almost wholly destroyed by them. They are also occasionally found in the gills of salmon that have lately left the sea.

Though the Salmon sold in London are mostly said to be from Newcastle, there are, in fact, none sent from that port; the principal supply being derived from Scotland, where the chief places of shipment are Berwick, Perth, Montrose, and Aberdeen. They are sent in boxes and packed in ice, which is afterwards sold to the confectioners. The Salmon was known to the Greeks and Romans, and appears to have been as much prized by the epicures of antiquity, as it is by those of the present day. It was formerly so plentiful in some parts of England, that farm-servants and apprentices used to stipulate with their masters, that they should not have salmon for dinner more than twice a week. Within these last twenty years, the breed of salmon is said to have considerably decreased in this island, even in rivers where the drains of manufactures, and water from lead and coal mines do not exist, as a probable cause of their diminution.

The *Salmo Fario*, or common trout, is found in most streams frequented by the salmon, as well as in many which the latter never ascend. The number and position of their fins are the same as in the salmon, though mostly with two spines less in the pectoral and anal fins; and the lower-jaw is a little larger than the upper. This is the most beautiful fish of all that are found in our rivers and lakes; and its colours, when first caught, display that changing variety when viewed in different lights, which is said to have been so much admired by the Romans in the lying mullet. The head is blotched with olive and dark green, with sometimes a shade of purple. The back is of an olive-brown, approaching to yellow towards the belly, which is of a silvery-white. The sides are beautifully variegated with red and yellowish-brown spots; and the fins of the belly are tinged with red, sometimes inclining to an orange colour. They are mostly caught from nine to twenty inches in length, and weighing from eight ounces to four pounds, though genuine burn trouts of the latter weight are not very common, and those of from five to six

pounds are still more unusual. The principal difference between the common and the salmon trout is in the colour, the latter bearing a stronger resemblance to the chief of the tribe, being thus very liable to be confounded with the grilse.

The trout spawns in the upper parts of streams similarly to the salmon, and nearly about the same time, though perhaps a little earlier; and a female salmon that has lost her mate has been known to select a trout to aid her in the completion of her work. The fry of the trout the grilse and the salmon are not to be distinguished on their first appearance.

The trout is a voracious fish, living on flies, worms, frogs, minnows, young perch, and other small fish, and is particularly destructive to the spawn of salmon, should the gravel under which it is deposited happen to be removed by heavy floods. This voracity exposes him in turn to become the prey of the angler; and statesmen poets, philosophers, and divines, have forgot the cares and vanities of the world in fly-fishing for trout. This is not the place for entering into any argument as to the immorality of this practice. Men, when speaking on such subjects are apt to be influenced merely by feeling, and to condemn as immoral what they merely dislike. It may, however, be observed, that many, of blameless integrity, and almost apostolical simplicity, have been partial to fly-fishing while others, certainly not of the most amiable character have been loud in its condemnation.

The wood-cut at the head of this article affords a correct and admirable representation of a salmon weighing about sixteen pounds, and of a common trout weighing about three and a half pounds.

C.

COSMOLOGICA; OR, OBSERVATIONS UPON NATURE AND THE UNIVERSE.

(Continued from page 139.)

NEXT to our convictions and acknowledgment of a DEITY, the most sublime employment of our understanding seems to be an inquiry into the structure of the UNIVERSE; and the form, qualities, and purposes of its component parts. With respect to the etymon of the term UNIVERSE, a learned linguist defines it to be a whole, "sine aliqua exceptione;"^{**} to this extent, we cannot pretend to go; the utmost stretch of human ingenuity never can reach to all God's Works, or explain all the phenomena of the CREATION; we must content ourselves with what we can investigate, and tolerably comprehend, of that part of the UNIVERSE, which includes our SOLAR SYSTEM; in particular, that which relates to the Globe on which we live; our own species, as rational animals, naturally comes foremost in this train of thinking; and then the Elements of Matter, with their uses and effects; not entering into the abstruse science of chemistry, but following that course which renders plain and manifest the causes and effects visible to common observation. After this, follow in their courses some disquisitions on the Planetary System; and, lastly, on the occurrences and events of the Earth, and things of terrestrial production; and first,

WHAT IS MAN?

He has been aptly called a Microcosm, or *World in Miniature*, because of his containing in nature and knowledge an abridgment of what the volume of Nature displays: in this class he is a mammillary biped, of appetite compound, carnivorous, granivorous, &c.;

* Without omitting anything.—LYTTELTON

in the order of creation the highest, by intellect connected with the spirit, that moved in chaos and which made the light, infusing into man its powers, the light of reason, and so he became a living soul inheriting a portion of the immortal and eternal spirit; in his form and structure wonderful, and surpassing all other mortal beings; by instinct, social; by sympathy, sentimental; endowed with speech, and most perfect in organization; his position, upright; his joints and limbs, flexible; and his port and motions majestic, suitable to the character of the Lord of the CREATION; at his presence all other creatures stand in awe, and by him are subdued; his external senses are fitted for corporeal comfort and pleasure; his ear receives the sound of melody: his eye reflects the beauties of nature; his nostrils admit the sweetest scents; his palate relishes the delicious fruits of the earth; and his feeling is exquisite beyond the language of description. Is he not favoured above all other creatures? Though man is not so swift as the horse, nor so strong as the ox, yet he commands them both, and uses them for his purposes and benefit. Even the huge elephant kneels and submits to the burden which man places on his back. The elements also yield to his ingenuity, and are made to contribute to his convenience; in his person, he is most judiciously formed for all the offices of life, the organs of sense being so placed as to scrutinize every thing that enters into his mouth for sustenance; the sight, the smell, and the taste, stand as sentinels, to examine all that passes, and to take care that nothing pernicious shall go into the portal of the alimentary receptacle; his hands and fingers are made for craft or labour, and the latter by being of different lengths, enable him to hold things of various shapes with perfect security; but, of all his organs of sense the most curious is the eye, and that which requires the most accurate description. It is true, that all the features of the face assist to give expression to the countenance, and indicate most of the passions and emotions of the mind, according as the muscles are acted upon by the nervous system, which becomes agitated through the sanguiferous fluid that continually communicates with the brain, by action and reaction; but the eye, in particular, having easier access, and proximity to the brain, most quickly and effectually announces the inward affections, even the eyelids are observed by physiognomists, in the art of discovering the characteristic dispositions of different persons. One of these, speaking of the upper eyelids, says "Qui enim hunc claram habent suberbi et feroces sunt; qui vero depresso ac dimidio fere oculum claudentium ita ut ferram adspicere videantur, humiles ac mites sunt."* The construction and use of this member of the body are, however, subjects of more importance than any scientific speculations upon its motions; by it we behold not only one object at a time, but a congregation of things, a whole landscape, a variety of objects, and that without confusion or intermixture; different colours and different shades appear, each in its natural qualities, form, and fashion. The iris, which circumvolves the aperture of sight, contracts or dilates to admit more or less expansion of vision, and of the rays of light that are needed without injury to the delicate texture of the retina, a thin membrane, like a net, that covers the orifice forming the pupil of the eye; and through the perforations of which substances are reflected with pictorial faithfulness. The oculist, in the dissection of this wonderful organ, may well find cause for amazement, and every human being by its use, gratitude and pleasure. Let us next attempt a complete analysis of the human MIND.

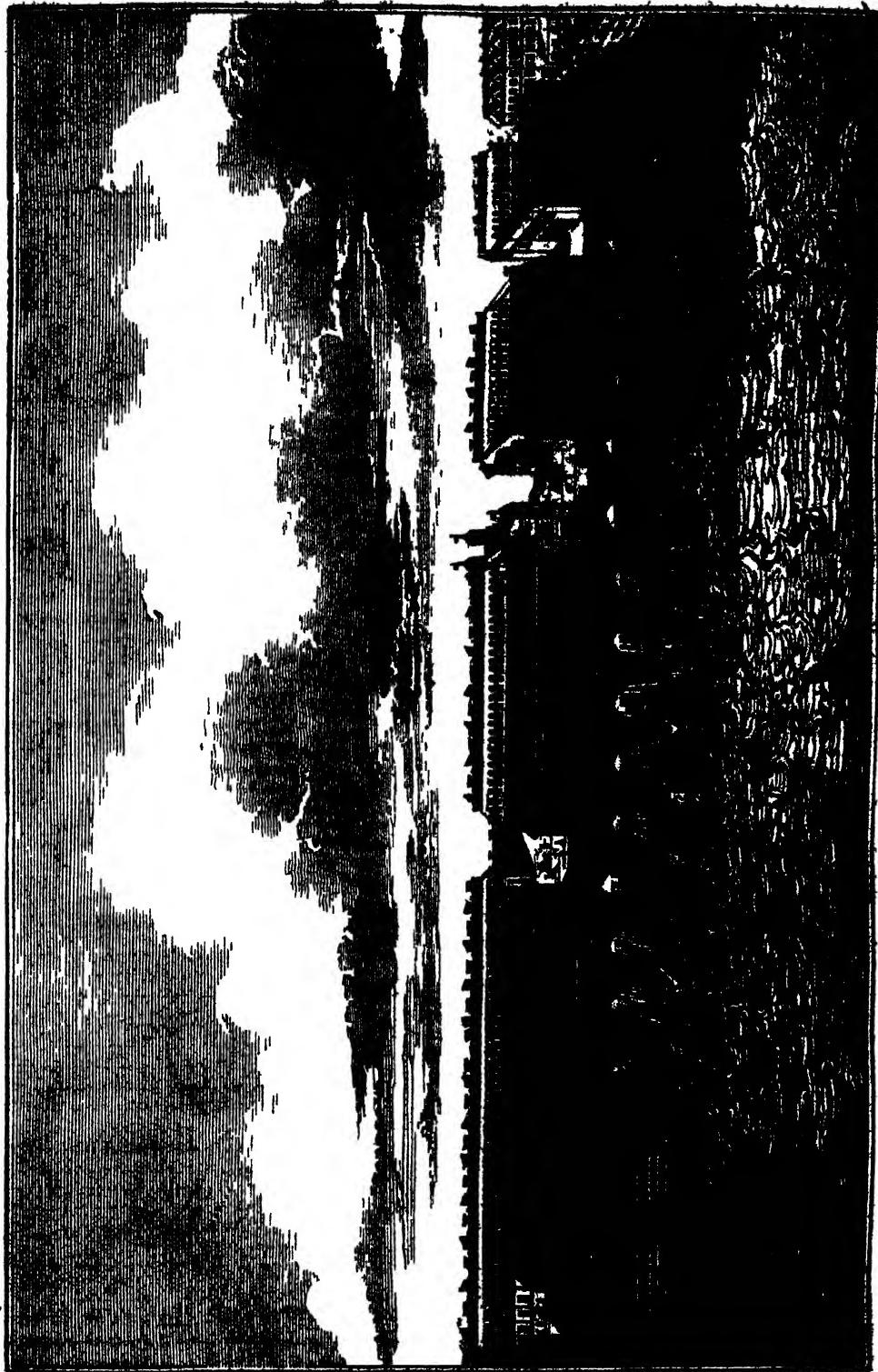
(To be continued.)

* For those who have them raised high are proud and fierce, but those that have them low, or half down, the eyes nearly shut, as seeming to look on the earth, are meek and humble."—PLACENTINUS.

** In consequence of an unforeseen circumstance, the promised Maps of London could not be produced in time for the present number, but will be given to the Public as early as possible.

No. XXXIII.)

GUIDE TO KNOWLEDGE.



OLD LONDON BRIDGE.

A CONCISE ACCOUNT OF LONDON, FROM ITS
BEGINNING TO THE PRESENT TIME.

(Continued from page 253)

The Queen's PALACE, also called Buckingham House, has been considerably, greatly enlarged, and almost rebuilt. It was originally a brick building, but now of stone. It was begun to be rebuilt by GEORGE IV., and intended as the permanent residence of the royal family, but as yet unfinished. When complete it will be a most magnificent structure. WESTMINSTER HALL is one of the largest rooms in Europe unsupported by pillars. It was built by WILLIAM THE CONQUEROR, and at present is used for the trial of peers, or of any person on the impeachment of the Commons. At the back of Westminster Hall are situated the Houses of Lords and Commons. The latter was formerly a chapel, built by KING STEPHEN, and dedicated to a saint of his name. The ADMIRALTY is a large building, containing the offices of the Lord Commissioners, and their clerks, who superintend and transact the business of the navy. On the top of the building are two telegraphs, one communicating with Portsmouth, and the other with Deal. The TREASURY is a very extensive building, the principal part of which is built of stone. The chief front is in the Park. SOMERSET HOUSE, a magnificent and stupendous structure, was founded on the site of the old palace, by order of the Protector SOMERSET, uncle to king EDWARD VI., in 1549. After his execution his palace fell to the crown. Here are concentrated a great number of government offices, and it also contains apartments for the Royal Academy, and Royal and Antiquarian Societies. Near Waterloo Bridge is an ancient building called the STANLEY, from PETER EARL OF STANLEY and RICHMOND, who first erected a house here in 1245, which afterwards came into the possession of HENRY, DUCHESS OF LANCASTER, who greatly enlarged and beautified it; and in the reign of EDWARD III., it was reckoned one of the finest palaces in England; but, in 1381, it was burnt to the ground, together with all its sumptuous furniture, by the rebels under WAT TYLER. It was afterwards rebuilt by HENRY VII. It now belongs to the crown, in which he detachments of the King's Guards. Here is also a prison for the confinement of deserters, and other offenders, and lodgings for recruits. THE ROYAL EXCHANGE, which occupies a considerable space in Cornhill, was founded by SIR THOMAS GRESHAM, in 1566. The original structure perished in the great fire in 1666. It was rebuilt in its present magnificence, form by the city, at the expense of 80,000*l*; it was completed in 1669. This building is especially set apart for the meeting of merchants. Within this edifice is the celebrated CAFFEHOUSE, called LLOYD'S WHITBCHAILE, a celebrated建立 of ancient times, is now converted into offices for public business. This palace was originally built by HUBERT DE BURGH, Earl of Kent in the reign of HENRY II. In it WORAZY took his final leave of great news, when it came into the possession of HENRY VIII., by the forfeiture of his fallen servant. THE MONUMENT, a stately pillar of the Doric order, 202 feet high, was raised to commemorate the great and awful fire in 1666, which consumed nearly every part of this noble city within the walls. THE ANTON HOUSE, the residence of the Lord Mayor, a massive but ponderous building, was erected in 1752. THE CROWN, a venerable and commodious building, situated in the heart of King's Bench and Common Pleas, and now the residence, and here also is transacted

the business of the Corporation. THE CUSTOM-HOUSE is a large and noble building, where vessels of 300 tons may lie and discharge their cargoes. At the INDIA HOUSE, in Leadenhall-street, is transacted the business of the East India Company. THE NEW POST OFFICE, in St. Martin's-le-Grand, is a most noble edifice, and is well adapted to the purpose for which it is intended. THE CORN EXCHANGE is in Mark-lane; THE HERALD'S COLLEGE is on St. Benet's Hill. THE BRITISH MUSEUM is a grand national depository of antiquities, books, and natural curiosities.

Besides the palaces above noticed, there are in England three others, viz; KENSINGTON, HAMPTON-COURT, and WINDSOR CASTLE. The palace of KENSINGTON, situated about a mile and a half from London, was the favourite residence of GEORGE II. It was originally the seat of the Earl of Nottingham, and was purchased from him by WILLIAM III., who greatly enlarged it. The gardens, which are three miles and a half in circumference, were first enlarged by MARY II., and much improved by QUEEN ANN.

The palace of HAMPTON, about twelve miles from London, was originally built by CARDINAL WOLSEY, and is a very magnificent edifice. The Cardinal, who delighted greatly in this palace, had spared no expense to furnish it in the most superb and elegant manner, but, finding it had raised the envy of several powerful persons, he, to avoid any ill consequences that might ensue presented it to HENRY VIII., who greatly enlarged it, and considerable improvements have since been made by several of his successors.

WINDSOR CASTLE, about twenty miles from London, was originally built by WILLIAM THE CONQUEROR, and here our kings have usually resided. This castle is situated upon a noble eminence, and enjoys an enchanting prospect of the THAMES, and of the adjacent country. The whole stands upon an area of about twelve acres. The apartments of Windsor Castle are exceedingly magnificent, and the ceilings, like those of Hampton Court, beautifully painted. The terrace of this castle is said to be the finest in the world, from which there is also an unbounded view over the adjacent country. Here are two parks, one called the Little, and the other, the Great Park. The Little Park is about three miles in circumference, and its walks are numerous and finely shaded. The Great Park is fourteen miles in compass, abounding in all kinds of game, and is so embellished by nature, as to surpass all that can be produced by the utmost labour and assistance of art.

The benevolent institutions in the metropolis are numerous, well-conducted, and of vast importance.

CHRIST'S HOSPITAL is a royal foundation for the maintenance and education of poor children. It is situated a little to the north of Newgate-street, and is a very extensive building. There are at present about 2000 children on the foundation, and about 500 more at the preparatory school at Hertford. The expenditure of this hospital is about 30,000*l* per annum. ST. BARTHolemew's Hospital is a magnificent stone building, near Smithfield, for the reception of the sick and maimed. ST. THOMAS'S, in the Borough, was founded for the same purpose. GUY'S HOSPITAL, also in the Borough, was erected at the sole expense of THOMAS GUY, an eminent bookseller of London, who left at his death the enormous sum of 200,000*l* for its endowment. These three hospitals are most excellent practical schools of medicine and surgery, and in each of them lectures are delivered by the most eminent professors in the different branches of medicine, surgery, chemistry, &c. Besides these there are several others, as the LO-

Hospital, in Whitechapel-road; St. George's Hospital, at Hyde-Park-corner; the Westminster Hospital, at the end of York-street; and the Middlesex Hospital, in Mary-le-Bowes. To these may be added Bethlehem and St. Luke's, for lunatics; the Foundling, for the education of poor orphan children; the Magdalene, for the reception of penitent women; and a great number of dispensaries, where advice and medicine are distributed gratis to the poor.

Southwark, sometimes called the Borough, is both by situation and character, an appendage to the metropolis, which it resembles both in number of houses and activity of commerce. It is separated from London by the Thames, but connected with it by London-bridge. The Borough is under the jurisdiction of the Lord Mayor, and is also one of the city wards, named *Bridge-ward Without*, and is represented by an alderman.

BRIDGES.

AMONG all the conveniences, as well as the noble edifices with which London is benefited and adorned, none are more important than the BRIDGES which cross the THAMES, for the accommodation of passengers and the facilitation of commerce. The first, and most ancient of these, was the OLD LONDON BRIDGE.

The building of which was commenced in 1176, but was not finished till 1209; it was then covered with houses, connected together by large arches of timber, which crossed the street, and had a very cumbrous appearance (*see the engraving*). In 1212, it was the scene of a dreadful accident, a fire having broken out at the Southwark end, an immense number of persons came from the London side to extinguish it; and while engaged in this benevolent purpose, the devouring element communicated with the opposite extremity of the bridge, and upwards of three thousand souls perished in the flames, or were drowned by overloading the vessels that were brought for their relief. Many eminent men, merchants, and others, resided in the houses on this bridge, among whom were the famous Hans Holbein, and the noted John Bunyan; and it is recorded, the first Earl of Halifax served his clerkship, and became a merchant, in one of these houses, having raised himself by his talents and industry to riches and eminence, previous to being ennobled by his sovereign on account of his superior claims to honour and distinction.

A new bridge has been lately erected, under the direction of John and George Rennie, Esqrs., from a design of the late John Rennie, Esq., at a short distance westward from the former. The first stone was laid by J. Garratt, Esq., lord mayor, in the presence of a large concourse of spectators, on the 15th of June, 1824. Of the five arches of which this bridge consists, the central one is 150 feet wide; those next to it on either side, 140 feet; and the extreme arches are each of them 130 feet wide; the roadway is nearly level, and the parapet plain, with buttresses rising from the piers. The opening of this bridge was attended by his majesty, WILLIAM IV., her majesty the Queen, and most of the royal family, many of the nobility, and others, for whom a sumptuous entertainment was provided, at the expense of the city of London, and under the direction of the lord mayor, Sir John Key, Bart., with the aldermen of the several wards, and other city officers.

BLACKFRIARS BRIDGE.

This bridge was built by ROBERT MILN, between the years 1760 and 1762, at an expense of 152,840/. It has

eight piers, and nine elliptical arches, the central one 100 feet wide, those adjoining 98 feet, the next 96 feet, and the next adjoining, 70 feet; the length of the bridge is 1,000 feet; the breadth of the carriage-way, 28 feet; and that of the footway, 7 feet on each side. When viewed from the water, a recess appears over each pier, formed by two Ionic columns, which support a corresponding recess above. The carriage-way of the bridge was lowered, and new-formed on the principle of M. Adam, but it has since been found necessary to restore it to its former state. This bridge is nearly equidistant from those of Southwark and Waterloo. It commands a fine view of St. Paul's Cathedral, as well as of both sides of the river; also of the Tower, the Monuments, Somerset House, Westminster Abbey, the Temple, and upwards of thirty churches.

WESTMINSTER BRIDGE.

WESTMINSTER BRIDGE is esteemed one of the most complete and elegant structures of the kind in the world. It is built entirely of Portland stone, and crosses the river where the breadth is 1223 feet. On each side is a fine stone balustrade, six feet nine inches in height, with recesses canopied over to shelter from the rain, and seats within to rest upon. The width of the bridge is 44 feet, having on each side a footway of 7 feet wide. It consists of 14 piers, and 13 large, with two small arches, all semi-circular; that in the centre being 76 feet wide, and the rest decreasing 4 feet each, so that the two least arches of the thirteen superior ones are each 52 feet. The width of the two small arches is about 20 feet. It is computed that about 40,000/- in value of stone and other materials are under water. The proportions of this bridge are so accurate, that if a person speak against the wall of any of the recesses on one side of the way he may be distinctly heard on the opposite side; even a whisper is perceptible during the stillness of the night. This magnificent structure was begun in 1730, and finished in 1750; at the expense of 389,000/-, voted by parliament.

It was built after a design of Monsieur LABAYE, an ingenious French architect.

WATERLOO BRIDGE.

WATERLOO BRIDGE may be regarded as one of the noblest structures of its kind in the world. In 1806, Mr. G. Dodd, after three years exertion, procured an act of parliament to give the present site, plan, and dimensions, of the bridge; but in consequence of some disagreement with the committee, he was superseded by Mr. R. M. Kinnis, who had the honour of completing this noble ornament of the British metropolis. The work was commenced in 1811, and finished June 18th, 1817, on the anniversary of the Battle of Waterloo, when the Prince Regent (afterwards George IV.), the Duke of Wellington, and many other distinguished personages were present. The style of the architecture is plain, but noble; and the materials are of the most durable kind; the outside courses being of Cornish, and the balustrades of Aberdeen granite. All the arches are elliptical, and of equal size; and, consequently, the road over them is level, in which respect this bridge differs from all others in London; each pier rests on 320 piles driven into the bed of the river, there being one pile to every yard square; the length of the piles is about 20 feet; and the diameter about 13 inches. At each extremity of the bridge are very handsome stairs to the water. The dimensions of this structure are as follows: Length of the stone-work between the abutments 1,000 feet; length of the road on the Surrey side, which is supported

by 40 brick arches (under one of which the street is continued from Narrow Wall) 1250 feet; length of road on the Strand side, supported by brick arches, 400 feet; width of carriage-road, 20 feet; and of each foot-pavement, 7 feet; span of each arch, 120 feet; extent of water-way in the clear, 1080 feet. The four toll lodges are neat, appropriate, Doric structures, at each of which is a clever contrivance for the purpose of checking. The iron turnstiles, which admit of only one person passing at a time, touching some machinery communicating with a clock, locked up in a box in each toll-house, the index of which is thereby moved, so that on looking at it the number of those that have passed is thereby directly seen. The bridge is exactly on a level with the Strand, and 50 feet above the surface of the Thames. During the summer months it is much frequented as a promenade, but there is not at present sufficient traffic to afford the prospect of much profit to the proprietors.

The tolls on this bridge are

	s. d.
Foot passengers	0 1
Coach, landau, chariot, &c., with four wheels and six horses	1 6
Do. do. with four do.	1 0
Do. do. two or three do.	0 6
Do. do. one do.	0 4
Chaise, tax-cart, with two horses	0 6
Do. do. with one do.	0 3
Single horse	0 2
Waggon, cart, or dray, for each horse	0 2
Wheelbarrow, truck, &c., drawn by hand	0 1½
Oxen per score	0 8
Calves, sheep, &c., per score	0 4

VAUXHALL BRIDGE

This bridge was originally projected by Mr. DODD, but in consequence of some disagreement he was succeeded by Mr. RENNIE, but afterwards by Mr. WALKER, under whose directions the present elegant fabric was constructed, at an expense of about 150,000*l.*, which is to be defrayed by a toll; the first stone was laid in 1813, by Prince Charles, the eldest son of the late Duke of Brunswick, and the bridge was completed in 1816. It consists of nine cast-iron arches, with piers formed by a wooden frame as a foundation, faced with Kentish ragstone and Roman cement; the arches are 78 feet in span, and 29 in height, and the length of the bridge is 860 feet. It contributes greatly to the beauty of the metropolis, and affords the inhabitants of Vauxhall, Lambeth, &c., an easy communication with the houses of parliament and courts of law, Pimlico, Chelsea, and their populous neighbourhoods: the tolls are

	s. d.
Foot passengers	0 1
Coach, landau, &c., with four wheels and six horses	2 6
Do. do. with four do.	2 0
Do. do. with two or three do.	1 0
Chaise with one horse	0 6
Waggon, cart, or dray, with six horses	1 6
Do. do. with four or five do.	1 0
Do. do. with two or three do.	0 8
Do. do. with one horse	0 6
Single horse or mule	0 2
Oxen per score	1 0
Calves, pigs, sheep, &c., per score	0 6

SOUTHWARK BRIDGE

This noble fabric forms a communication from the bottom of Queen-street Cheapside (being in a direct line from

Guildhall), to Bankside, Southwark, and thence to the various Kent and Surrey roads; it was originally projected by Mr. JOHN WYATT; but its erection was commenced in September, 1814, under the direction of the late JOHN RENNIE, Esq. It consists of three wide arches; the centre arch of 240 feet span, and those at the ends 210 feet each. These arches are composed of cast-iron, but the piers and the abutments are of stone, forming altogether the most stupendous bridge of such compound materials in the world. The central arch of Southwark bridge exceeds in span the famous iron bridge at Sunderland, by four feet, and of the Rialto, at Venice, by 167 feet. The weight of the iron alone is more than 5808 tons. The foundations of the piers are twelve feet below the bed of the river, and the bases of the immense timber piles, upon which those foundations rest, including the wooden platform of two and a half feet thick, are twenty-six and a half feet lower. The distance between the two abutments is 708 feet. The entire expense incurred by the erection of this bridge amounted to 800,000*l.*. This bridge was constructed with so much accuracy, that, when the centring of the middle arch were removed, it only sunk at the vertex one inch and seven eighths. The turnstiles are on a similar construction to those at WATERLOO BRIDGE. It was completed, and opened to the public in March, 1819.

The tolls are,

	s. d.
Foot passengers	0 1
Coach, landau, &c., with three or four wheels, and six horses	1 6
Do. do. and four horses	1 0
Do. do. and two or three do.	0 6
Chaise, &c., with one horse	0 3
Waggon, dray, &c., with four wheels, and six horses	1 0
Do. do. four or five do.	0 8
Do. do. two or three do.	0 6
Do. do. one horse	0 4
Cart, or two-wheeled vehicle, and one horse	0 3
Single horse or mule	0 1½
Oxen per score	0 8
Calves, pigs, sheep, &c.	0 4

BRITISH MANUFACTURES.—VI.

WATCHMAKING.

In a former paper we examined the theory of that valuable domestic machine the clock, and pointed out a mode of improving its construction by the use of a cheap and valuable pendulum. We may now pursue a similar course with reference to a portable train of wheels, which when enclosed in case becomes a pocket-watch.

A watch of the reign of Queen Elizabeth was a very curious instrument. In point of size it closely resembled a common desert plate of the present day, and with reference to weight it was much better fitted for the shoulder of a market-porter than the side of the Virgin Queen.

The one of which we speak was really the property of her Majesty—but Shakspeare makes one of his characters allude to the use of a pocket-watch as though it was a thing of frequent occurrence in his day. The passage to which we allude is in Twelfth Night, and Malvolio, in his fancied prosperity says, that he shall “perchance wind up his watch or play with some rich jewel.” Watches did not come into general use till the time of James; and in the

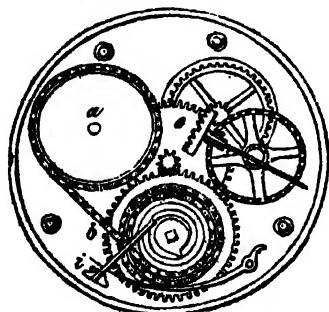
reign of the second Charles they were brought into tolerably reasonable dimensions.

It is a matter of difficult research to ascertain what artist first reduced the portable spring clock into the size of a watch, which is supposed to have been first offered in Germany; but it is evident that watches had become common in France before the year 1544: in which year the corporation of master clockmakers in Paris had a statute enacted to ensure to themselves the exclusive privilege of making and causing to be made, clocks, alarms, and watches, large or small, within the precinct of the said city.

The small clocks and watches, however, which were made antecedently to the time of Huygens and Dr. Hooke, were very imperfect performers, and professed not to subdivide the hour into minutes and seconds; the double lever, and the balance arising out of it, were very imperfect regulators of the motion produced in the train of wheelwork by the maintaining power, inasmuch as they were under the influence of various opposing agents, such as friction arising from coarse workmanship, the inertia of matter, resistance of the air, &c.; the consequence of which was, that the weight of the moving balance was to be determined by experiments, such as would be a proper counterpoise to the agency of the main spring on the moving train, and at the commencement of each returning oscillation a considerable pause took place, which made a part of the measure of time to be indicated. These inconveniences at length were obviated by the introduction of a balance-spring, which became to the balance what gravity is to the pendulum; and the acceleration given to the moving balance during the first half of the oscillation, is thus sufficient to overcome the resistance opposed to its motion during the second half; and when the shape, length, and strength of the regulating spring are duly proportioned, its isochronal performance approaches very nearly to the regularity of the pendulum. The contest for the honour of this useful invention was warmly disputed between Huygens and Dr. Hooke, for several years subsequently to 1685; but if priority of publication can be considered as a proof of priority of invention, the palm is due to our ingenious countryman, Hooke.

The main-spring of a watch consists of a flexible plate of steel, wound round a small axis which is effected by the key, and its subsequent effort to uncoil itself becomes the maintaining power.

The power of the spring is transmitted to the balance by means of several toothed wheels, which multiply the number of revolutions that the chain makes on the fusée, to such a number, that though the last or balance-wheel turns $9\frac{1}{2}$ every minute, the fusée will at the same time turn so slowly, that the chain will not all be drawn off



from it in less than twenty-eight or thirty hours, and it makes one turn in about four hours; this assemblage of wheels is called the train of the watch.

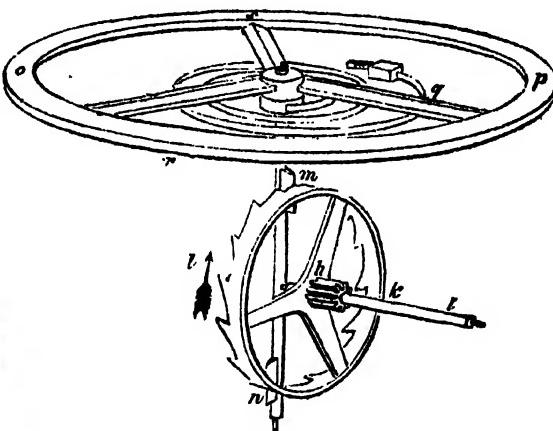
In the accompanying engraving, *a* represents the cylindrical box which contains the spring &c., round which is wound the chain connecting it with the fusée. To this latter is attached the great wheel, *b*, having forty-eight teeth on its circumference, which take into and turn a pinion of twelve teeth, fixed on the same arbor with the

Centre-wheel, *c*, so called from its situation in the centre of the watch; it has fifty-four teeth to turn a pinion of six leaves, on the arbor of the

Third wheel, which has forty-eight teeth; it is sunk in a cavity formed in the pillar-plate, and turns a pinion of six, on the arbor of the

Contrate-wheel, which has forty-eight teeth cut parallel with its axis, by which it turns a pinion of six leaves, fixed to

The balance-wheel; one of the pivots of the arbor of this wheel turns in a frame, called the pottance, fixed to the upper plate, and the other pivot runs in a small piece fixed to the upper part, called the counter-pottance, so that when the two plates are put together the balance-wheel pinion may work into the teeth of the contrate-wheel, as in the accompanying diagram



The balance-wheel, *l*, has fifteen teeth, by which it impels the balance, *o s p*; the arbor of the balance, which is called the verge, has two small leaves or pallets, *m n*, projecting from it, nearly at right angles to each other; these are acted upon by the teeth of the balance-wheel, in such a manner, that at every vibration the balance receives a slight impulse to continue its motion, and every vibration so made, suffers a tooth of the wheel to escape or pass by, whence this part is called the escapement of the watch, and constitutes its most essential part. The wheel *l*, is sometimes called the scape-wheel, or crown-wheel; its action is explained by the above diagram, which shows the wheel and balance detached. Suppose in this view, the pinion *h*, on the arbor of the balance-wheel, or crown-wheel, to be actuated by the main-spring which forms the maintaining power, by means of the train of wheel-work in the direction of the arrow *l*, while the pallets *m* and *n*, attached to the axis of the balance, and standing at right angles to each other, or very nearly so,

are long enough to fall in the way of the ends of the sloped teeth of the wheel when turned round at an angle of 45° , so as to point to opposite directions, as in the figure; then a tooth in the wheel below, for instance, meets with the pallet *n* (supposed to be at rest), and drives it before it a certain space till the end of the tooth escapes; in the mean time the balance *o s p*, attached to the axis of the pallets, continues to move in the direction *o s p*, and winds up the small spiral or pendulum spring *q*, one end of which is fast to the axis, and the other to a stud on the upper plate of its frame; in this operation the spring opposes the momentum given to the balance by this push of the tooth upon the pallet, and prevents the balance going quite round, but the instant the tooth escapes, the upper pallet *m*, meets with another tooth at the opposite side of the wheel's diameter, they therefore moving in an opposite direction to that below; here this pallet receives a push which carries the balance back again (having as yet but little power in the direction *o s p*), and aids the spring, which now unbends itself till it comes to its quiescent position, but it swings beyond that point, partly by the impulse from the maintaining power on the pallet *m*, and partly by the acquired momentum of the moving balance, particularly when this pallet *m*, has escaped; at length the pallet *n* again meets with the succeeding tooth, and is carried *backward* by it in the direction in which the balance is now moving, till the maintaining power and force of the unwound spring together overcome the momentum of the balance, during which time the recoil of the balance-wheel is apparent (for the seconds hand of the watch is usually put on the pivot of the arbor of the contrate-wheel); at length the wheel brings the pallet *n* back again till it escapes, and the same process takes place with the pallet *m*, as has been described with respect to the pallet *n*; thus two contrary excursions or oscillations of the balance take place before one tooth has completely escaped, which is the reason there must always be an odd number of teeth in this wheel, that a space on one side of the wheel may always be opposite to a tooth on the other in order that one pallet may be out of action while the other is in action.

OF THE GREEK PHILOSOPHERS AND THEIR DIFFERENT SECTS.

PHILOSOPHY, among the GREEKS, signified the love of wisdom or science; it contains two distinct branches, viz.: the study of *nature*, which elevates and ennobles the soul, and the study of *morality*, which inspires virtue, and conducts man to happiness.

Many celebrated men point out divers tracts to arrive at wisdom and happiness, and the difference of their principles give rise to a great number of sects, of which the following are the most famous.

The Greeks possessed two principal schools: viz., the IONIC and ITALIC; the former was founded by THALES, of IONIA, the latter by PYTHAGORAS, of the island of Samos, who quitted his native country, and afterwards fixed himself in ITALY; hence its name *Italic*.

The first of these sects was that founded by THALES, who flourished about the year 680 before the Christian era. Thales was a native of MILETUS in Ionia, hence his followers assumed the name of *Ionic*.

Thales was one of the Seven wise men of Greece. He was descended from Cadmus. Like the rest of the ancients, he travelled in quest of knowledge, and for some time resided in Crete, Phoenicia, and Egypt.

He was the first who studied the stars, calculated with accuracy a solar eclipse, and fixed the measure of time. Like Homer he looked upon water as the principle of all natural things. His followers are called the *Ionic Sect.*

ANAXAGORAS, the preceptor to Pericles, Socrates, and Euripides, was one of his disciples; but the honour and glory of his school was the famous SOCRATES, the wisest, most virtuous, and perhaps the most perfect of men.

Anaxagoras disregarded wealth and honours, to indulge his fondness for meditation and philosophy. He also travelled into Egypt for improvement, and used to say, that he preferred a grain of wisdom to a heap of gold. He applied himself much to astronomy, and was acquainted with eclipses; but his ideas concerning the heavens were wild and extravagant. Pericles often consulted him in matters of state; and once dissuaded him from starving himself to death.

SOCRATES was the creator of fine morals, and foretold immortal truths. He believed in the unity of God, in the immortality of the soul, and in the rewards and punishments of another life.

SOCRATES had a number of distinguished disciples; among whom were Antisthenes, Alcibiades, Xenophon, Aristippus, and Euclides, but the most famous of all was PLATO.

Socrates was a native of Athens, and was born about 451 years b. c. He was fond of labour, and so injured himself to suffer hardships, that he acquired that serenity of mind, and firmness of manner, which the most alarming dangers could never destroy, nor the most sudden calamities surprise, nor even move.

He was always attended by a great number of illustrious pupils, whom he instructed by his exemplary life, as well as by his doctrines. The philosophy of this great man forms an interesting epoch in the history of the human mind.

His actions, sayings, and opinions have been faithfully recorded by two of the most celebrated of his pupils, Xenophon and Plato. It was to the examples set by Socrates that the Greeks were particularly indebted for their greatness and splendour.

PLATO was also a native of Athens, but he did not confine himself, like his master (*Socrates*), to the subject of morals alone, but studied every branch of philosophy.

His thirst after knowledge prompted him to travel into Egypt, Italy, Sicily, and Persia, where he acquired various branches of knowledge, generally unknown.

Plato is the founder of what is called the *Academician Sect.* His works are numerous, and excepting twelve letters, are all written in dialogue. They abound with the most lofty sentiments, and with the most useful maxims for the conduct of life, and for the science of government. His principal works were a discourse on the *Immortality of the Soul*, and a *Treatise on the Republic*.

He was succeeded in his school by his nephew Socrates. But his scholars after his death, distinguished themselves into two sects, the followers of the one continuing the name of *Academicians*, and to teach in the same place where Plato had taught; and those of the other, that of *Peripatetics*, who gave their lessons in the Lycium.

Of the numerous disciples of Plato, ARISTOTLE, preceptor of ALEXANDER the GREAT, was the most famous. He was a native of Stagira, a city of Macedonia. He was born 384 b.c.

Aristotle first went to Athens to study philosophy under Plato, at the age of seventeen; and applied him-

self with such industry and success in acquiring his master's doctrines, that he soon became the soul of his school.

After spending several years in the education of *Alexander*, he returned to *Athens*, and opened a school in the *Lecum*, where he founded the sect called the *PERSPECTIVE*, so named because he was accustomed to give his lessons *walking*. His lectures drew together a vast crowd of hearers.

He is looked upon as the greatest and soundest genius of antiquity. His works are also very numerous, but the most esteemed are his treatises on *logic*, *rhetoric*, *poetry*, and *politics*. His treatise on *RHETORIC* has been justly regarded by the learned of all ages as the most accurate and complete that has ever yet appeared.

Aristotle met with the fate of most great men. He attracted the envy of his contemporaries, who accused him of impiety. To disappoint the malice of his enemies, and to avoid the unhappy fate of *Socrates*, he fled to the island of *Eubaea*, where he survived his retreat from Athens only a few months, when vexation and regret are supposed to have ended his days.

ANTISTHENES, an Athenian, was the founder of the *Cynic Sect*; he placed happiness in virtue, and virtue in the contempt of riches and enjoyments of life.

He taught rhetoric, and had among his pupils the famous *Diogenes*; but when he had heard *Socrates*, he shut up his school, and said to his pupils, "Go, seek for yourselves a master; I have now found one."

One of his pupils asked him what philosophy had taught him? "To live with myself," said he. He sold his *all*, and preserved only a very ragged coat, which drew the attention of *Socrates*, and tempted him to say to the *cynic*, who carried his contempt of dress *too far*, "ANTISTHENES, I see thy vanity through the holes of thy coat."

Diogenes, his disciple, carried these maxims even to delirium, and personal independence to the forgetfulness of all decorum.

He dressed himself in the garment which distinguished their sect, and walked about the streets with a tub on his head, which served him as a house, and a place of repose.

Such singularity of conduct soon gained him reputation, and *Alexander the Great* condescended to visit the philosopher in his tub.

He asked *Diogenes* if there was any thing in which he could oblige him; "Get out of my light," was the only answer which the philosopher gave him.

Such an independence of mind so pleased the monarch, that he turned to his courtiers and said, "Were I not *Alexander*, I would wish to be *DIogenes*."

The doctrines of austerity of this sect were followed no longer than *Antisthenes* and *Diogenes* were themselves examples of the cynical character; and after their death they were all forgotten.

ZENO, a native of the island of *Cyprus*, was the founder of the *sect* called the *STOICS*. This sect may be said to be the *Cynic* reproduced, but stripped of its vices, and adorned with all its virtues.

The *Stoic sect* is the most noble that man can follow, and the most capable of ennobling humanity. The *true stoic* follows virtue by instinct, and practises good by choice.

He approaches nearest to the divinity; in a word, he is the perfect sage, who perhaps never existed.

Among the most illustrious followers of his doctrine, and as the most respectable writers, were *Epicetus* and *Seneca*.

The finest characters of antiquity, *Eudemus*, *Tran-*

jān, and *Marcus Aurelius*, professed the maxims of the *stoic school*, which ought particularly to be that of *statesmen*, and of all who conduct or govern men.

Zeno was born about 300 years before the *Christian era*. His native place, *Cyprus*, having been originally peopled by a colony of *Phoenicians*, he is sometimes called a *Phoenician*.

The place he made use of for his school was a *public portico*, which was adorned with the pictures of the most eminent painters.

It was the most famous portico in *Athens*, and called by way of eminence "*The Porch*." It was from this circumstance that the followers of *Zeno* were called *Stoicks*.

The *ITALIC SCHOOL* was founded by *PYTHAGORAS*, about the year 500 before the Christian era. He did much honour to *Greece*, and much good to *Italy*.

He is said to have travelled into *Egypt*, *Phoenicia*, *Chaldea*, and *India*, in quest of knowledge. Though a great geometrician and astronomer, he looked upon virtue as the first of all the sciences.

After having taught some time in *Greece*, he went into that part of *Italy* which is called *Magna Graecia*, on account of the colonies which had settled there.

He resided chiefly at *Crōtnā* and *Tārēntūm*, where he openly harangued in the cause of virtue, and produced a great revolution in the ideas and manners of the people.

His opinion was, that there were but five things which ought to be combated; viz., *the diseases of the body*, *the ignorance of the mind*, *the passions of the heart*, *seditions in cities*, and *discord in private families*.

Pythagoras introduced into the western world a doctrine which he had imbibed somewhere in the east, where it had prevailed from the most early ages.

This doctrine was the transmigration of souls from one body into another; as, for example, if a man was vicious and wicked, his soul animated the body of some unclean animal, and passed through a progress of misery proportioned to his crimes in this life.

Hence *Pythagoras* and his followers, religiously abstained from eating flesh, lest they should devour that of their former friends and acquaintance.

The accounts of this philosophy which have been transmitted to us, are, in all probability, very imperfect; and in nothing, perhaps, more so, than in its real scope and meaning. Let us, therefore, on this point, as on every other of the same kind, be extremely cautious in condemning. As it at present stands, it appears truly ridiculous and absurd.

EPICURUS, a celebrated philosopher, and founder of the *EPICUREAN SECT*, was a native of *Gargettus*, in *Attica*. Though of poor parents, and of an obscure origin, he was sent early to school, where he soon distinguished himself by the brilliancy of his genius.

The doctrine originally maintained by *Epicurus* and his followers, was, that the happiness of mankind consisted in pleasure, not such as arises from sense, or gratification, or from vice, but from the enjoyments of the mind, and the sweets of virtue.

After a time, however, the doctrine of this sect became equivocal. It was when the disciples of *Epicurus* held that *PLEASURE* was the *summum bonum*, or chief good, of man; which leaves it undefined.

Hence there arose two kinds of *Epicureans*, the *rigid* and the *remiss*: the *first* were those who understood *Epicurus*' notion of pleasure in the best sense, and placed all their happiness in the pure pleasures of the mind, resulting from the practice of virtue; the *loose* or *remiss*

Epicureans, taking the words of that philosopher in a gross sense, placed all their happiness in bodily pleasures or debauchery.

The term *Epicurean*, as at present used, signifies a person who is effeminate and fond of ease, and is luxurious in eating and drinking, consulting only his private and particular pleasure.

OF THE FOUR GREAT HISTORICAL AGES.

THE FOUR GREAT HISTORICAL AGES are those in which the **ARTS** were carried to perfection, and which, by serving as the era of the greatness of the human mind, are examples for posterity.

The FIRST of these ages to which true glory is annexed, is that of **PHILIP** and **ALEXANDER**, or more properly, that of a *Pétrôle*, a *Démochénès*, an *Aristotèle*, a *Plutō*, an *Apollès*, a *Phidias*, and a *Praxitèles*; and this honour was confined within the limits of **ANCIENT GREECE**; the rest of the known world being then in a state of barbarism.

The SECOND AGE is that of **CESAR** and **AUGUSTUS** (of Rome), distinguished likewise by the names of *Lütcrῖtūs*, *Cicrō*, *Titūs Līvīus*, *Virgīl*, *Hörāce*, *Ovid*, *Vīrrō*, and *Vītrūvīus*.

The THIRD AGE is that which followed the taking of **Constantinople** by **MAHOMET** the 2d; when a family of private citizens were seen to do that which ought to have been undertaken by the monarchs of Europe.

The MEDICIS invited to *Florence* all the learned who had been driven out of *Greece* by the Turks; this was the age of *Italy's* glory.

Here the polite arts soon recovered a new life. The ITALIANS honoured them with the title of *Virtu*, as the FIRST GREEKS had distinguished them by the name of *Wisdom*.

Every thing now tended towards perfection; a *Michael Angelo*, a *Raphael*, a *Titian*, a *Tasso*, and an *Ariosto* flourished. The art of engraving was invented; elegant architecture appeared again as admirable as in the most triumphant ages of *Rome*; and the **GOthic BARBARISM**, which had disfigured **EUROPE**, in every kind of production for a thousand years, was driven from **ITALY** to make way for the *arts, sciences, and good taste*.

The arts, being again transplanted from **GREECE** to **ITALY**, were again cultivated there with great success.

The ITALIANS alone, for a long period, kept possession of every thing that was beautiful, excepting *music*, which was then in a very rude state, and *experimental philosophy*, which was every where unknown.

The LAST and FOURTH AGE, which includes the present period, is that known by the name of the AGE OF **LEWIS XIV.** (of *France*), and is that which is considered to approach the nearest to perfection. Of all the four ages, the last being enriched by the discoveries of the three former, it has done more in many things than all those put together.

The *Arts* in general, however, have not been carried much further in the fourth age, than they were under the MEDICIS, AUGUSTUS, and ALEXANDER; but human reason, as regards philosophical inquiry, has been greatly improved.

It was in the present age that we first became acquainted with sound philosophy; and which has not only reanimated all Europe, which was languishing, but also the greater part of the world. This happy influence has latterly been chiefly confined to ENGLAND.

Before the age of **LEWIS XIV.**, A. D. 1643, the ITALIANS called all the people on this side the *Alps* by the general name of **BARBARIANS**.

In the twelfth and thirteenth centuries, the ITALIANS were the only commercial people of Europe. *Commerce* began to spread itself towards the north of Europe about the end of the thirteenth century.

Although the cultivation of the fine arts, which laid the foundations of the fourth age, had its rise in **FRANCE**, the commerce of that country, for a long period, was successively carried on by the *Genoese*, the *Venetians*, the *Portuguese*, the *Flemish*, the *Dutch*, and the *English*.*

Although the French had the honour of being the founders of the fourth age of literature, they had no share in the great discoveries and inventions of other nations.

They have no title to the **DISCOVERIES** of *painting*, *gunpowder*, *glasses*, *telescopes*, the *sector*, *compass*, the *air-pump*, *gas*, nor *steam*, nor to that of the **TRUE SYSTEM OF THE UNIVERSE**.

And while the PORTUGUESE and SPANIARDS were discovering and conquering new countries from the east to the west of the known world, and Charles V., of *Spain*, had already scattered the treasures of MEXICO and PERU over *Europe*, the French were making **TOURNAMENTS**.†

Of all the phenomena of nature, earthquakes are the most dreadful and destructive.

Clouds are usually from a quarter of a mile to two miles high.

The Maranon, or Amazon, in South America, is the largest river in the world.

The Volga is the largest river in Europe.

Chimborazo, the highest of the Andes, and the most lofty mountain in America, is 21,451 feet in height.

The height of the most elevated point in the Pyrenees, according to M. Cassini, is 6646 feet.

Etna, a burning mountain in Sicily, is 10,963 feet above the level of the sea. On a clear day it may be seen from Valetta, the capital of Malta, a distance of one hundred and fifty miles.

The height of the Peak of Teneriffe, according to Cordier, is 12,166 feet.

The highest mountains in the world, are the **Himalayan** in Asia D'ho'lā'gir, or Dhawalageri, one of this range, is 27,551 feet high.

The peak of Snowdon, in Wales, is 3571 feet high.

Ben Nevis, in Scotland, is the highest mountain in Britain; its elevation above the level of the sea is 4380 feet.

* At the accession of **LEWIS XIII.**, to the crown of France, A.D. 1610, France had not a single ship; PARIS at this period contained less than 300,000 inhabitants, only four public edifices of note, and the other cities of the kingdom resembled poor villages. The nobility, who were all stationed in the country, lived in dungeons surrounded with deep ditches. The peasants who cultivated the land were greatly oppressed. The high roads were almost impassable, and the towns destitute of police, and almost without any kind of government. Thus, for nearly the space of 1000 years, was the genius, not only of the inhabitants of *France*, but almost of all *Europe*, restrained under a gothic ignorance, destitute of laws or fixed customs, and strangers to almost every thing but war and idleness. The clergy of these times lived in disorder and ignorance, and the common people without industry, stupified in their wretchedness.

† A **Tournament** is a military game, or mock encounter, in which the combatants thrust at each other with lances.

GUIDE TO KNOWLEDGE.

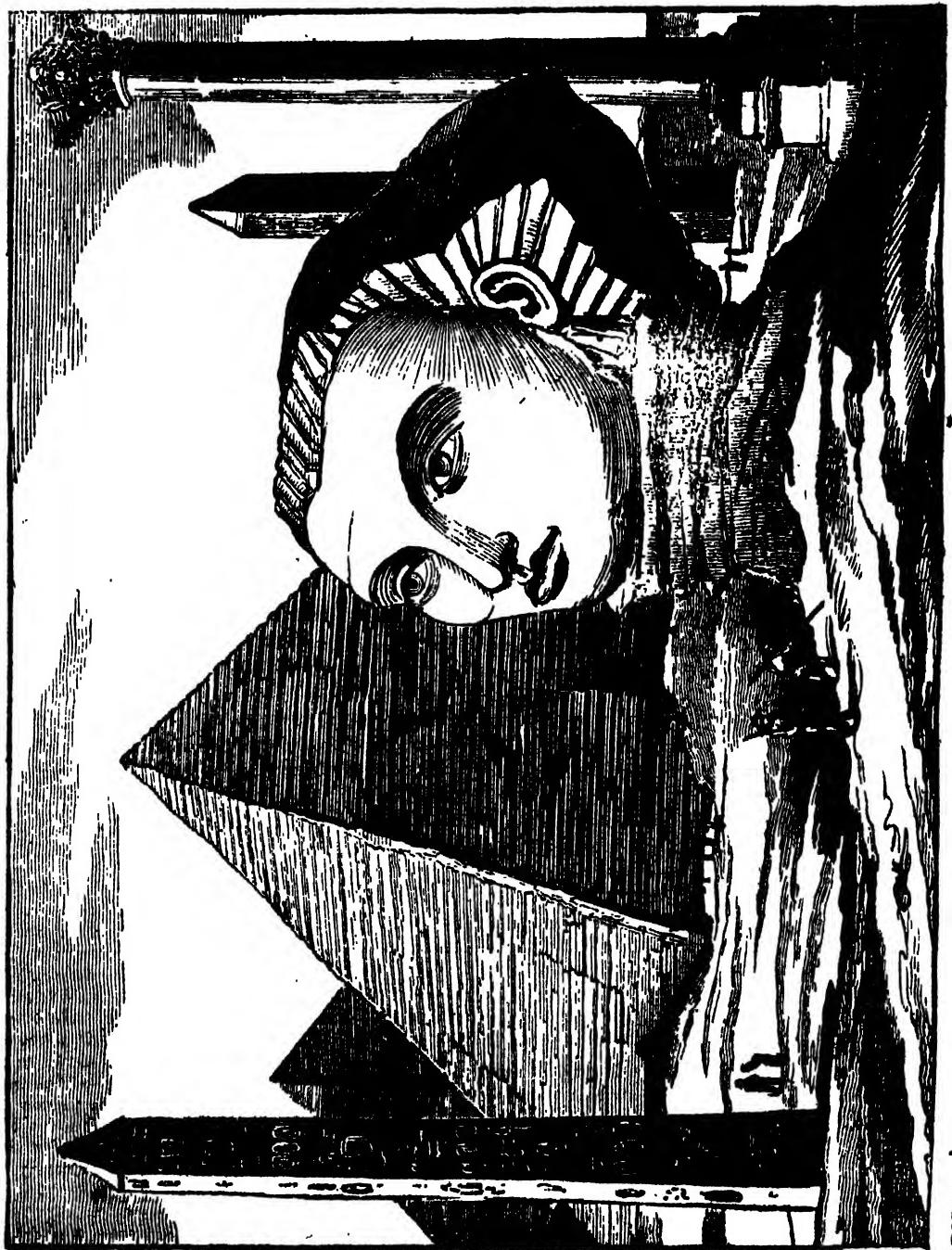
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[ONE PENCE]



THE SPHINX.

The name and design of this fabulous monster (which is represented in the engraving), are both derived from that hieroglyphical manner in which the ancient people of the eastern nations used to convey their ideas and sentiments to each other, and also to transmit them to posterity; hence, it occurs that none of their descendants can give any satisfactory account of their origin, or by whom this, and other emblematical effigies, were erected; because, since the period when those monuments of art and ingenuity were constructed, the natives of the countries where they are placed, have fallen into gross ignorance and abasement, owing, no doubt, to the state of slavery and abject dependence in which they have been placed, and in which they continue to this day, by repeated incursions and conquests of various tribes and nations, and by the despotism with which they are still fated to be governed; for where people are found to sink under the galling yoke of tyranny, their learning, their arts, their morality, and even their very history will also pass into oblivion.

This figure of the *Sphinx* is a compound of animals, or a conjunction of the rational with the brute creation. It has the head and breasts of a woman, the wings of a bird, the claws of a lion, and the body of a dog, indicative of that debasement that human beings bring on themselves, who suffer the animal passions to get the better of their reason; and, though some of the Egyptians think it is a symbolical representation of the overflowing of the Nile, in the months of July and August, when the sun passes through the signs *Leo* and *Virgo*, yet the former idea seems more applicable to its intention, especially when we connect it with the story, the *riddle* said to have been propounded by this heterogeneous animal, and which *Oedipus* resolved. The riddle was this: "What creature is that, which in the morning goes on *four* feet, and at noon on *two*, but at night, on *three*?" *Oedipus* announced, that it was a human creature; who, when a babe, crawls on hands and knees; when a man, walks upright; and, in age, requires the aid of a staff to support him. The whole story seems to point at the moral of this *Sphinx*, which stands near the site of the ancient *Thebes*, and where the transaction took place, as to the exploits and mistakes of this *Oedipus* and his mother, *Jecasta*, whose character might have been aptly enough designated by this singular figure.

Of this Sphinx, situated near the Pyramids, there is, comparatively, but little to be seen, except from the shoulders upward, the rest being buried in the sand. *Captain Caviglia*, however, caused the sand to be removed, in order to examine its parts below, in which, with much difficulty and labour, he succeeded, but it has since accumulated as before, and leaves only the upper parts of the *Sphinx* uncovered. The body is principally formed out of the solid rock; the paws are of masonry, extending forward fifty feet from the body; between the paws are several sculptured tablets, so arranged as to form a small temple; and further forward, a square altar with horns.

THE PYRAMIDS OF EGYPT.

There are few passions that agitate the human heart stronger than the desire of fame. It is found in all, from the lowest to the highest: and while it stimulates to good actions, it deserves to be encouraged, and its gratification promoted.—But, alas! men do not in general seek fame

by actions which contribute to the comfort and happiness of their brethren; on the contrary, they build their hopes of it on achievements, which are either useless in themselves, or pernicious to their fellow-creatures. Thus, the prize-fighter expects to gain renown by bruising, and mangling his sturdy opponent; and the hero is incited by the same desire to spread ruin and devastation over fertile lands, and to introduce famine and slaughter into the peaceful habitations of those who never injured him.

Nor is this desire of fame confined to the life of the aspirant. The hero hopes to live in the pages of the historian; and he who has performed no actions sufficiently great to entitle him to admission there, seeks to perpetuate his memory by monuments of brass, of marble, or of some other durable material.

This desire of posthumous* celebrity, as well as of present renown, is likewise to be found in all ranks of society. It prompts the peasant to have his name, and perhaps his virtues, recorded on a humble stone in a country churchyard, as strongly as it does the commander of armies, or of navies, to aspire to a splendid monument in some great national edifice.

Would men, however, reflect on Solomon's exclamation—" *Vanity of vanities, all is vanity!*" —and observe, how universally it is verified, they would not suffer themselves to be incited to deeds of folly, cruelty, and blood, for the sake of a name, which is sure to be forgotten, or execrated by posterity.

What is the opinion of all good men (and that of others is worthless) respecting *Alexander*, *Cæsar*, *Hanaparte*, and a thousand others, who have aspired to live in the records of fame as conquerors? It is, that they were scourges of mankind, sent to fulfil God's righteous judgments, but actuated themselves by no other motives than desire of dominion, and the applause of the base and unthinking.

Nor has the truth of *Solomon's* assertion been more strongly exemplified, than in the defeat of their expectations, who build their hopes of living in the memory of posterity on monuments of stone or brass. The inscription on the humble gravestone becomes obliterated by time, and the proud mausoleum,† the splendid palace, and the august temple, crumble into dust. Should they, however, be erected on such principles, and with such solidity, as to appear to defy the efforts of time and the elements, still the end of the founder is not answered; his name perishes, while his edifices still remain. Nothing more strongly proves the truth of this assertion, than the *Pyramids of Egypt*.

The *travellers*, who have travelled the regions of historical antiquity, and sought into the nature and origin of nations, their monuments, and the remains of their former condition, certainly confer great benefit on the age in which they live, as well as on the rising generation: enthusiasm in this particular pursuit may not yield much of benefit to the indefatigable adventurers who engage in it; but mankind in general enjoy the advantage by the faithful reports that these voyagers give of their inquiries and observations. History is thereby elucidated, and doubtful traditions either confirmed, or controverted; to look back upon the past is a retrospect of delight, as compared with

* Performed after one's death.

† A pompous tomb or monument, erected in honour of a person that is dead. This name was first given by Queen *Artemista*, of *Cyrus*, to a costly sepulchre she erected in honour of her husband *Mausolus*, which was counted one of the wonders of the world.

the present; and since we can have no presentiment of the future, our contemplations dwell with more satisfaction on the past, on which we are anxious to obtain the best information. There is a charm in the investigation of those things which time has made venerable, that even apathy can scarcely resist: sensible of this, and wishing to supply as far as our means extend, the cravings of our readers after KNOWLEDGE, we here enter upon a disquisition on some of the Egyptian Antiquities, and in this number of our work more particularly on the PYRAMIDS.

Those stupendous fabrics, the works and labours of men's hands, so long as they have been the wonder of ages, have never yet been traced to their original; the source of the Nile and other rivers running through deep forests, barren sands, and trackless deserts, have been discovered, but the *Stream of Time* baffles and mocks the efforts of man to explore its origin, or even to ascend the course of its mysterious current. With respect to these lofty monuments of antiquity, the PYRAMIDS, many conjectures have been formed; some have supposed they were built by the ISRAELITES, while in a state of bondage under the yoke of the Egyptians, and they formed this opinion upon the authority of that part of *Sacred Scripture*, which states the slavery that was endured by the people of the JEWS, in making *bricks*, and being compelled to perform severe manual and corporal labour; but this opinion does not by any means settle the point, as to the purposes and designs of those singular structures, nor does it determine the fact, whether some of them may not have been built long before the ISRAELITES dwelt in the *Land of Goshen*. Doubtless, they have been erected by command of the rich and potent kings of Egypt; but, whether as *Mausoleums* for the dead, or monuments of certain events, does not appear to be satisfactorily determined.

The three most noted Pyramids are situated in the borders of the Lybian Deserts, about ten miles from *Grand Cairo*, which city stands on the banks of the *Nile*, latitude 31° North, and longitude $31^{\circ} 20'$ East, and in the province of *Bahari*. There are many others dispersed throughout the country, but they are not so remarkable, and some of them are fast falling into ruins and decay.

The largest of these three Pyramids is 693 feet broad at the base, and 499 feet in perpendicular height; but taken on the slant, it is 693 feet, the same as the extent of the base, so that it forms an equilateral triangle; the whole area of the base is therefore 480,249 square feet, covering above eleven acres of ground. It is higher than St. Paul's, London, by 117 feet; so that if the *Monument*, on Fish Street Hill, were placed on the top of St. Paul's Church, they would together be about equal the height of this Pyramid. It is ascended outside by steps, which are from $\frac{2}{3}$ to 4 feet high, and from 12 to 18 inches broad, all round the structure. These steps are so regular, that a line drawn from the top to the bottom would touch the edge or angle of every step. The number of steps is not exactly stated; some say 255, others 260; but this difference may arise from counting them on separate sides. The top of this Pyramid does not end in a point, but in a square platform, each side of which is above 16 feet, so that some scores of people may stand upon it, and from thence enjoy one of the finest prospects in the world.

The mode of ascent on the outside, Dr. Clarke thus describes: "The reader may imagine himself to be upon a staircase, every step of which, to a man of middle stature, is nearly breast high, and the breadth of each

step is equal to its height; consequently the footing is secure; and although a retrospect, in going up, sometimes fearful to persons unaccustomed to look down from considerable elevations, yet there is little danger of falling."

"In some places, indeed, where the stones are decayed, caution must be required, and an Arab guide is always necessary; but with his assistance the means of ascent are such, that almost every one may accomplish it."

"Having at length reached the top, we found a platform, 32 feet square, consisting of nine large stones. From this spot the view amply realized our expectations. All the region towards *Cairo* and the *Delta** resembled a sea, covered with innumerable islands. Forests of palm trees were seen standing in the water, the inundation spreading over the land where they stood, so as to give them an appearance of growing in the flood."

Of his account of the interior, the following is a condensed sketch.

"Having collected our party upon a sort of platform, before the entrance of the passage leading to the interior, and lighted a number of tapers, we all descended into the dark mouth of the large Pyramid.

"Proceeding down this passage, which may be compared to a chimney about a yard wide, we presently arrived at a very large mass of granite; † this seems to have been placed on purpose to choke up the passage: but a way has been made round it, by which we were enabled to ascend into a second channel, sloping in a contrary direction, towards the mouth of the first.

"Having ascended along this channel, to the distance of 110 feet, we came to a horizontal passage leading to a chamber, with an angular roof, in the interior of the Pyramid. On the right hand of this passage is the mysterious well, said by PLINY to be 129 feet in depth. The result of our experiments proved the truth of this account.

The roof of this chamber is formed by the inclination of large masses of stone, leaning towards each other, and meeting at the top.

Quitting this passage, we climbed the slippery and difficult ascent that leads towards the principal chamber, the workmanship of which, from its perfection, and its immense proportions, is truly astonishing. All about the spectator, as he proceeds, is full of majesty, mystery and wonder.

This noble room is the very heart and centre of the Pyramid; the floor, the sides, the roof of it, are made of vast and exquisite tables of Thebaic marble. So nicely are these masses fitted to each other on the sides of the chamber, that, having no cement between them, it is really impossible to force the blade of a knife between the joints. The length of the chamber is about twelve yards, and the breadth six."

The periods of their erection, and the uses for which they were designed, are, as before observed, matters of mere conjecture; and it is now pretty certain that the object of such buildings will never be ascertained: but, that there was a rage or infatuation for the erection of such edifices, in the early ages after the flood, appears to be

* *Delta* is a name of a very fertile tract of Egypt, bordering on the Mediterranean Sea, between the branches of the *Nile*, and so called from its resemblance to the Greek letter of the same name. This term is also applied to the tracts which lie between the mouths of the *Ganges*, the *Ava*, and other rivers of similar shape.

† A variegated stone, composed of separate and very hard concretions, rudely compacted together, of great hardness, and giving fire when struck with steel.

evident, and these Egyptian Pyramids very much resemble, in miniature, the Tower of Babel; perhaps, also, the same motives actuated the founders and projectors of both; which in the instance of the Tower of Babel, was, “*to get them a name, lest they should be scattered abroad upon the face of the earth.*” In both cases, however, the design, if it were the same, has proved entirely abortive. The authors of the schemes, whatever they were, have long since been forgotten, and their unrecognised monuments are wasting under the devouring effects of Time.

ON THE CRUSADES.

SECTION I.

AMONG the long catalogue of the wars by which the earth has, at various times, been desolated, there is perhaps scarcely one more worthy of remark and record than those which are called the Crusades.* The tremendous bloodshed attendant upon those wars was not indeed wholly without a beneficial influence upon mankind; but that influence was exerted through a medium very different from that which was anticipated by those who preached the propriety of the Crusades, or by those who shared the fatigues, the sufferings, and the perils of them. Let us not, however, anticipate; our readers will undoubtedly make these and other similar reflections, when they have perused even our brief sketch of the wars undertaken by the powers of Christendom for the recovery of the “*HOLY LAND.*”

It was both right and inevitable that all pious Christians should view with peculiar regard and affection the land in which their Redeemer had wrought miracles, and endured persecution and agony, and finally, had died upon the cross, and ascended up into heaven. Amiable and natural as this feeling was, it was, like all other human things, liable to erroneous application, and susceptible of mischievous perversion. The sepulchre of our Lord being preserved at Jerusalem, that once flourishing and favoured city was loved by the Christians of Europe with an almost idolatrous ardour; and thousands, we might, indeed, rather say millions, boldly encountered the manifold dangers and difficulties which, at that early period, were inseparable from long journeys, whether by sea or land, under the mistaken impression that their devotion would be more acceptable at Jerusalem than in their own land, and that the act of making a pilgrimage, so long, so painful, and so dangerous, would of itself be imputed to them as a deed sufficiently praiseworthy to cover and atone for a multitude of even heinous errors. The folly, indeed, the wickedness, of this idea is obvious; our God is every where alike, and our praises and supplications are as acceptable in one land as in another; and there was, in a religious point of view, nothing praiseworthy in pilgrimages to the Holy Land. But there was undoubtedly something both solemn and delightful, in tracing the progress of our Redeemer, and in viewing the very scenes through which he had deigned to pass; and there were, undoubtedly, many of the pilgrims who were chiefly induced to visit the Holy Land by a desire to do so. With whatever motive, however, Christians journeyed towards the holy sepulchre, their treatment, when they arrived in its presence, was of the most galling and oppressive kind. For, though there were many Christians resident in Jerusalem and its neighbourhood, they were few in number, and utterly powerless,

when compared to the infidels by whom they were surrounded and oppressed. These ferocious and unsparing people, not merely robbed the Christians and treated them with the most ruffianly violence, but, in many cases, even imprisoned them, and compelled them to purchase the liberty of which they had been unjustly deprived with a very heavy ransom. This state of things subsisted for many years; many of those who had suffered by the violence and injustice of the infidels, died actually from their violence, or perished in endeavouring, without the necessary means, to regain their native countries. Even of those who had experienced the violence of the infidels in Palestine, and yet returned safely to their homes, the majority were obscure persons, who had not abilities or means to make known the wrongs which had been inflicted upon them, or sufficient personal consequence to render their wrongs a matter of any consequence to the haughty kings, and still haughtier barons of the day. At length, however, an individual, with zeal to dare, and eloquence to persuade, arose, to call up the powers of Christendom to redress an evil which was more or less felt by the subjects of every one of those powers. This individual was PETER THE HERMIT. He was native of Amiens, in France, and having visited the Holy Land as a pilgrim, he had seen, and was indignant at seeing the insults to which Christians of all countries were exposed there. He resolved to endeavour to interest the powers of Christendom in a matter which he, unjustly as we have already shown, in common with most persons then living, considered to be intimately connected with the spiritual welfare of the Christian world. Deeming pilgrimage, as almost all then deemed it, a most efficacious act of devotion, he naturally grieved that so many, and such serious obstacles were thrown in the way of those who wished to perform it; and he viewed the infidels, not merely as robbers and oppressors, but as the instruments, though unconscious of being so, of the great spiritual enemy of mankind. Having represented his feelings and his views to the patriarch of Jerusalem, that personage, who necessarily shared the former, was readily induced, or rather required no inducement, to enter into the latter.

At this period the papal see was in the full pride of power and authority, and to the Pope, therefore, the patriarch of Jerusalem addressed a most pathetic and impassioned letter, describing the extortion and violence to which all Christian pilgrims were liable, pointing out the consequences which would inevitably result from the Turks and Saracens being allowed to proceed unchecked in their ravaging and usurping career: and, finally, imploring the Christian powers of Europe to arm, in the cause of their powerless fellow Christians in the East, and to destroy, or render powerless, the ferocious infidels by whom they were surrounded, insulted, and oppressed. Furnished with this important document, Peter hastened to Europe, and laid it before the Pope.* While Peter the Hermit was exciting the Pope to rouse the powers of Europe to arm against the Turks and Saracens, on religious grounds, Alexius Comnenus, the Greek emperor, sent ambassadors to the Papal council, held at Placentia,† advising a similar course, on political grounds; and observing, that though his dominions would, undoubtedly, be the first prey of the Turks, if the European powers did not interfere, yet, that those powers would in the result suffer equally with himself, as his ruin would put the Turks in possession of the means of

* Pope Urban the Second.

† A city in Italy, now called Placenza.

prosecuting that scheme of conquest, and oppression of which they desired the whole civilized world to become the object. Thus doubly and powerfully urged, the Pope himself became as zealous in the cause as those who had sought his interference on its behalf. His agents in all parts were instructed to use their utmost ability and diligence in exciting men's minds to detestation of the infidels, and a determination to chastise them, and put a stop to their cruelties and extortions; and at a great council held at Clermont, the Pope in person delivered an eloquent and impassioned oration to the same effect. Nor was Peter the Hermit inactive all this time; contrariwise, he preached and exhorted from place to place, and when, by his own exertions, and those of the Pope and the papal agents, an enthusiastic hatred to the infidels was kindled in the bosoms of men of all ranks and ages; Peter proved his sincerity, though not his judgment, by leading the way towards the Holy Land in his sacerdotal garments, and with a rope bound round his waist instead of a girdle. Thus attired, and full of ~~zeal~~, Peter, at the head of a motley multitude, chiefly consisting of peasants, ill armed and totally undisciplined, set forward to avenge the wrongs of the Christians of the East, and to rescue the holy sepulchre from the presence and insults of the Turks and Saracens. From a tumultuous and undisciplined herd, such as this, what could be expected? Nothing, but that which actually happened.

Though many of those who composed Peter's band were undoubtedly sincerely desirous to wage war with the infidels, and to do honour to the Christian faith; though many of them, perhaps most of them, had forsaken their homes solely through the influence of these notions of mistaken zeal and erring piety; there were, undoubtedly, many who calculated rather upon plunder than danger, and in whose estimation the riches of Palestine were of infinitely more importance than its ancient and hallowed fame. Unprovided, not merely with the munitions of war, but, as relates to the majority of this class, with the common necessities of life also, they had not proceeded beyond Hungary, ere they evinced considerable contempt for the laws of property, and freely helped themselves to whatever property lay in their way which happened to be portable, and either suitable to supply their necessities or to purchase wherewithal to do so. Though only a part of Peter's band, for *army* it cannot correctly be called, acted thus unjustly and disgracefully, the inhabitants treated the injury as one inflicted by all the Crusaders in common, and watching a favourable opportunity, fell upon some large, but detached, parties, and massacred them with every circumstance of passionate and unsparing revenge. The evil thus inflicted upon the innocent through the bad conduct of the guilty, who were comparatively few in number, did not end here; for historians have not been wanting who have endeavoured to throw upon all the obloquy which properly only belongs to a few. This is unjust; the piety of the first Crusaders was exceedingly warped and misled; they mistook passion for zeal, and shed blood and kindled strife in the name of the God of mercy and of peace; but we must not, on that account, brand them all as mercenary and brutal robbers, because a few persons of that description intruded themselves into their ranks.

Regardless of the fate of their late companions, which indeed had no connexion with the Holy Land, or with the prowess of the infidels, the Crusaders pressed forward, and at length came actually into collision with the much-detested infidels. The Crusaders displayed courage the most undaunted; such courage, indeed, as nothing could

have inspired but the zeal which burned within them. But courage and numbers are of little avail when discipline and munitions are wanting. And every new attempt of the Crusaders ended only in a new and terrible slaughter of them, and a new triumph to the infidel hosts, whom they had fondly hoped to chastise and put to shame and confusion.

Those who were fortunate enough to escape death by the scimitars of the infidels, and who reached, after the most appalling sufferings and difficulties, exhausted and way-worn, those homes which they had quitted in health, spirits, and zealous daring, gave a terrible account of the valour, ferocity, and prowess of the Turks and Saracens, whom they described to be of superhuman stature and bulk, and of a most terrific appearance. That they did not state all this without *some* occasion appears clearly enough; for, near NICE, Solyman, the Turkish sultan, caused a *pyramid* of considerable size to be constructed with the bones of the Christians slain in one battle! But, with the natural propensity of swelled and beaten men, they erred in describing the persons of their adversaries, whose stature by no means exceeded that of Europeans, and whose countenances bore as little resemblance as can well be imagined to the fierce and terrible-looking countenances which the returned crusaders described; and copies of which, even in much later times, have glared from many sign-posts in England; of which glaring and exaggerated countenances it can only be said, that they not only bear no resemblance to those of the infidel Saracens, but are utterly unlike any human visages, infidel or Christian.* Yet they are not without use, for they serve to convince us that our ancestors, as well as foreigners, who served in the Crusades, experienced a most desperate and destructive reception from the infidels. For nothing but such a reception could have caused them so to exaggerate the stature, and misrepresent the features, of their opponents.

HISTORIETTES.—I.

To make a sudden and strong impression.....some single circumstance, or brief narration, happily selected, has more power than the most laboured description.—*Ency. Brit.*

STANISLAUS; OR, THE MILL OF MARIEMONT. AN HISTORICAL FACT.

The following narrative was related by Constantine, Count Sobieski, a descendant of JOHN SOBIESKI, King of Poland; and who seemed to have inherited the spirit of that great monarch.

In the year 1771, instigated by the courts of Vienna and Constantinople, the confederate lords of Poland were laying waste their country, from one end to the other, and perpetrating all kinds of outrage on the loyal inhabitants. A plan was laid for surprising and taking the king's person. Forty conspirators met at Czetschokon, and in presence of their commander, *Pulaski*, one of the most ardent of these rebels swore, with the most horrid oaths, to deliver STANISLAUS, alive or dead, into his hands. About a month after this meeting, these noblemen, at the head of a band of assassins, disguised themselves as pea-

One of these, but executed in a very superior manner, is still to be seen in front of the Saracen's Head inn, Snowhill, London. In this one the size of the features is not nearly so exaggerated as it is in some which we have seen elsewhere.

sants and concealing their arms in waggons of hay, which they drove before them, they entered Warsaw unsuspected.

On the third of September, 1772, they found an opportunity to execute their scheme. At ten o'clock at night they placed themselves in those avenues of the city through which they knew his majesty must pass, in his way from Villanow,* where he had been dining with me. His carriage was escorted by four of his own attendants, and twelve of my guards. We had scarcely lost sight of Villanow, when the conspirators rushed out, and surrounded us, commanding the coachman to stop, and beating down the men with the butt end of their muskets. Several shots were fired into the coach; one passed through my hat, as I was getting out, sword in hand, the better to repel an attack, the motive of which I could not divine. A cut across my right leg, with a sabre, soon laid me under the wheels; and, whilst I lay there, I heard the shot pouring into the coach like hail, and felt the villains stepping over my body to finish the murder of the king. It was then that our friend Butzon, who was at that period a private in my service, stood between his sovereign and the rebels. In one instant he received several balls through his limbs, and a thrust from a bayonet in his breast, which cast him, weltering in his blood, upon me.† By this time all the persons who had formed the escort were either wounded or dispersed. Being now secure of their prey, one of the assassins opened the carriage-door, and, with shocking imprecations, seizing the king by the hair, exclaimed, "Tyrant, we have thee now; thy hour is come!"—and discharged his pistol so near his majesty's face, that he felt the heat of the flash. A second villain cut him on the forehead with his sword, whilst a third, who was on horseback, laying hold of his collar, between himself and another, at full gallop, dragged him along the ground, through the suburbs of the city.

During the latter part of this outrageous scene, some of our frightened people returned with a detachment, and, seeing Butzon and me almost lifeless, carried us to the royal palace, where all was commotion and alarm. The footguards immediately followed the track that the conspirators had seemed to take. In one of the streets they found the king's hat, dyed in blood, and his pelisse, perfectly reticulated with bullet-holes. This confirmed their apprehensions of his death; and they came back, filling all Warsaw with dismay.

The assassins, meanwhile, got clear of the town: finding, however, that the king, by loss of blood, weakness, and wounds in his feet, was not likely to exist much longer in their manner of dragging him towards their employer, they set him on a horse and redoubled their speed. When they

* This large and magnificent palace, which stands on the north-west bank of the *Vistula*, near Warsaw, was the favourite residence of John Sobieski, King of Poland. That monarch, after having delivered his country from innumerable enemies, used to retire to his palace at certain seasons. When Charles XII., of Sweden, visited his tomb, at Moscow, he exclaimed, "What a pity that so great a man should ever die!"

† To reward the wounds which this brave and faithful soldier had received in the defence of his sovereign, STANISLAUS, after his deliverance from the assassins, caused himself to be brought into his room in a chair, when he shook hands with him, thanked him, and put it at his option to become what he pleased about his majesty's person, or hold what rank he liked in the army. Butzon, attached to the Sobieski family, under which his ancestors had lived and fought, only begged of his sovereign to be permitted to remain with the Count Sobieski. The king accordingly gave him the command of those troops, among whom he was once only a private soldier.

came to the moat which surrounds Warsaw, they compelled him to leap across it. In the attempt, his horse fell twice, and, at the second fall, broke its leg; they then compelled him, fainting as he was with pain, to mount another, and spur it over. The conspirators had no sooner passed the ditch, than they threw his majesty down, and held him while Lukwaski tore from his neck the ribbon of the black eagle, and its diamond cross. Lukwaski was so foolishly sure of his prisoner, that he quitted his charge, and repaired with the spoils to Pulaski, meaning to show them as an incontestable proof of his success. Many of the other plunderers followed his example, leaving seven only of the party, with Kosinski at their head, to conduct the unfortunate STANISLAUS.

The night was become so dark, that they could not be sure of their way; and their horses stumbling at every step over stumps of trees and hollows in the earth, increased their fears to such a degree, that they obliged the king to keep up with them on foot: in doing this he literally marked his path with blood, his shoes having been torn off in the struggle at the carriage. Thus they continued, wandering backwards and forwards, and round the skirts of Warsaw, without any exact knowledge of their situation. The men who guarded him became, at length, so much afraid that their prisoner would take advantage of these circumstances to escape, that they repeatedly called on Kosinski for orders to put him to death. Kosinski refused; but their demands growing more violent and imperious, the king momentarily expected to receive the points of their bayonets in his breast.

As for myself, when I recovered from my swoon, and my leg was bound up, I felt myself able to stir; and, questioning the officers who stood about my coach, I found that a general panic had seized them. They knew not how to proceed; they shuddered at leaving the king to the mercy of the confederates; and yet were fearful, by pursuing them further, to increase them. I tried what I could to dispel this last dread. Anxious, at any rate, to make another attempt to preserve him, though I could not ride myself, I strenuously advised an immediate pursuit on horseback; and that neither darkness nor danger should be permitted to impede their course. A little spirit on the side of the nobles soon brought back hope and animation to the terrified soldiers; and my orders were instantly obeyed, but, I must add, almost as instantly disappointed; for, in less than half an hour, they returned in despair, showing me his majesty's coat, which they had found in the fosse, and of which, I suppose, the Russians had deprived him when they rifled him. It was rent in several places, and so wet with blood, that the officer who presented it to me declared it as his opinion, that they had murdered the king there, and had drawn away the body; or, by the light of the torches, he could trace drops of blood to a considerable distance.

Meanwhile, the king was driven before the seven conspirators so far into the wood of Bielaney, that, unknowing whither they went, they came to one of the guardhouses, and to their extreme terror, were accosted by a patrol. Four of the banditti immediately disappeared, leaving only two with Kosinski; who, much alarmed, forced his prisoner to walk faster, and keep a profound stillness. Notwithstanding all this precaution, scarcely a quarter of an hour after, they were challenged by a second watch; and the other two men now taking to flight, left Kosinski, full of dismay, alone with the king. His majesty, sinking with pain and fatigue, besought permission to rest for a moment. Kosinski refused, and, putting his sword to

watch his heart, compelled him to proceed. The king obeyed in silence.

As they walked on, the unfortunate Stanislaus, scarcely able to drag one limb after the other, observed, that his conductor gradually seemed to forget his vigilance, till at last he appeared thoroughly absorbed in thought. He took courage at this, and conceiving some hope, from the manner in which he was agitated, he ventured to say, "I see that you know not how to proceed; you cannot but be aware, that the enterprise in which you are engaged, and how it will, is full of peril to you. Successful conspirators are always jealous of each other: Pulaski will find it as easy to rid himself of your life, as to take mine. Avoid this danger; and I promise you none on my account. Suffer me to enter the convent of Bielaney; we cannot be far from it; and then, do you provide for your safety." Kosinski, rendered desperate by the circumstances in which he was involved, replied, "No; I have sworn; and I would rather sacrifice my life than my honour."

The king had neither strength nor spirits to make any answer; they continued to break their way through the underwood till they arrived close to Mariemont. Here Stanislaus, unable to stir another step, fell back against a tree, and again implored for one moment's rest, to recover some power to move. Kosinski now consented. This unexpected humanity gave his majesty courage to employ the minutes during which they sat together, in another attempt to soften his heart, and to convince him that the oath he had taken was atrocious, and by no means binding to a brave and virtuous man.

Kosinski heard him with attention, and exhibited strong symptoms of being affected. "But," said he, "if I should assent to what you propose, and reconduct you back to Warsaw, what will be the consequence to me? I shall be taken and executed."—"I give you my word," answered the king, "that you shall not suffer any injury. But, if you doubt my honour, escape while you can. I shall find my way to some place of shelter, and will direct your pursuers to take the opposite road to that which you may choose." Kosinski entirely overcome, threw himself on his knees before his majesty; and, imploring pardon for what he had done, swore that from that hour, he would defend his king against all the conspirators, and would trust confidently to his word for future preservation. The king then directed him to seek refuge for them both in the mill, near which they were discoursing. Kosinski obeyed, and knocked, but no one gave answer. He then broke a pane of glass in the window, and through the aperture begged succour for a nobleman, who had been waylaid by robbers. The miller refused to come out, or to let them in, telling them that it was his belief they were robbers themselves; and that if they did not go away he would fire on them.

* This dispute had not long continued, when the king contrived to crawl close up to the window, and say, "My good friend, if we were banditti, as you suppose, it would be as easy for us, without all this parley, to break into your house, as to break this pane of glass; therefore, if you would not incur the shame of suffering a fellow-creature to perish for want of assistance, let us in."—This argument prevailed, and the man admitted them. After some trouble his Majesty procured writing-materials, and addressed a few lines to me at the palace, which he prevailed on one of the miller's sons to carry.

The joy experienced at the receipt of this note, I cannot describe. The words it contained were literally these:

"By the miraculous hand of Providence I am delivered from the arms of assassins. I am now at the mill of Mariemont. Send as soon as possible, and take me away. I am wounded but not dangerously."

Regardless of my condition, I instantly got into a carriage, and, followed by a detachment of horse, arrived at the mill. I met Kosinski at the door, keeping guard with his sword drawn. As he knew my person he admitted me directly. The king had fallen into a sleep, and lay in one corner of the hovel on the ground, covered with the miller's cloak. To see the most virtuous monarch in the world thus abused by his ungrateful subjects, pierced me to the heart; and, kneeling down by his side, I took hold of his hand, and, in a paroxysm of tears, which I am not ashamed to confess, I exclaimed, "I thank Almighty God, that I again see my sovereign alive!" These words struck the simple family with amazement. They instantly dropped on their knees before the king, whom my voice had awakened. The good Stanislaus, graciously thanking them for their kindness, told the miller to come to the palace the next day, when he would show him his gratitude. Soon after, the officers of the detachment assisted his Majesty and myself into the carriage; and, accompanied by Kosinski, we reached Warsaw about six in the morning. His Majesty alighted at the palace, amidst the joyous cries of the people, shouting "The king is alive!" Never whilst I live, shall I again behold such a scene. The great gate was ordered to be left open. Every soul in Warsaw, from the highest to the lowest, came running to catch a glimpse at their rescued sovereign.

THE HEATHEN MYTHOLOGY.

SECTION II.

THERE are several personages spoken of in the fictions of the Heathens under the title of Hercules; but the Hercules whom they deified was the son of Jupiter, by the mortal Alcmena. It seems that his valour and abilities were so great, that in the course of time, in addition to his own great actions, those of all the other personages who had borne the same name were attributed to him by his zealous worshippers. Twelve labours of courage, address, activity, and strength, are ascribed to him, and related at great length by the heathen authors. Charmed with the abilities of his half mortal son, Jupiter took him at his death up into Olympus, and gave to him in marriage Thebe, the very beautiful and seemingly juvenile goddess of youth. Castor and Pollux, sons of Leda, were celebrated for their skill in gymnastic exercises. The former was particularly excellent as an equestrian, and the latter as a pugilist or boxer. Immortality was granted to each of them, but they were only allowed to enjoy it alternately.

Esculapius was originally a mortal and a physician. His skill in medicine, and the numerous and extraordinary cures he effected caused him to be taken up into Olympus,

* Our readers may be anxious to know what became of him. The king, in entering the palace, presented him to the people as his preserver. They thronged forward in crowds to get near enough to kiss the hand or touch the clothes of their monarch; and, elated with joy, they turned to Kosinski and loaded him with demonstrations of gratitude, calling him "the saviour of their good king." Kosinski bore this with surprising firmness; but in a day or two, when the facts became known, he felt that he might meet with different treatment from the people, and therefore petitioned his majesty for leave to depart. Stanislaus consented, and he retired to Semigalia, in the papal territories.

and immortalized as the god of medicine, in conjunction with Apollo.

Theseus, another of the deified mortals, was taken up into Olympus on account of his extreme heroism during his life, as king of Athens.

Terminus was the god of boundaries. When Romulus established his infant colony at Rome, he caused great stones to be set up as landmarks, to prevent, as far as possible, any future disputes from arising among his subjects relative to the extent of their respective possessions. As, however, even a great stone could be removed by a person fraudulently inclined, he subsequently caused them to be hewed into the figure of the god Terminus, and caused that god to be worshipped; judging that dread of a supernatural vengeance would prevent from invading their neighbours' rights many who would have paid no respect to morals and despised any merely temporal authority.

The Muses were nine female deities, who respectively patronised and presided over the arts, sciences, and literature, viz.,

Clio,	the tutelar deity of history,
Euterpe	of music,
Thalia	of comedy and pastoral poetry,
Melpomene	of tragedy,
Terpsichore	of dancing,
Erato	of sacred, amatory, and lyric poetry
Polyhymnia	of rhetoric and singing,
Calliope	of eloquence and heroic poetry, and
Urania	of astronomy.

Morpheus, or Somnus, was the god of sleep, Plutus of riches, and Æolus of the winds. Astraea was the goddess of justice, and Nemesis of vengeance. The latter was always attended by the three furies, Tisiphone, Alecto, and Megara, who are called by the ancients sometimes Diræ and sometimes Eumenides. They minister to Nemesis, and, under her directions, punished the wicked both on earth and in the infernal regions. Of the Pareæ, or fates, we have already spoken. Proteus was a sea deity, to whom Neptune gave the knowledge of futurity. He was consequently consulted by mankind; but he was only with the greatest difficulty made to give an answer to the inquiries addressed to him. He had the wonderful power of changing his body into various forms, as of a lion, a stream of water, or a flame of fire. It was therefore necessary for those who desired to consult him to surprise him as he lay upon the sea-shore, and strongly secure him with fetters of iron. Having been thus secured, this fickle deity instantly became tractable and compliant, in order to regain his liberty.

Pluto, the brother of Jupiter and son of Saturn, had the infernal regions assigned to him as his portion of his father's dominions. The gloomy situation of his portion was by no means displeasing to Pluto, who was an exceedingly stern, grim, and inexorable, personage; but it placed him under considerable disadvantage when he began to think of forming a matrimonial alliance. Not one of the goddesses could be persuaded to share his dreary honours with him; and he at length resolved to take by force what he could not procure by respectful and urgent entreaty; and seeing Proserpine, the daughter of Ceres, wandering with her nymphs in the beautiful scenery of the island of Sicily, he placed her in his chariot, and urged his impetuous horses to their utmost speed. After proceeding some distance, the god struck the earth violently with his

trident, and a large opening appeared, through which he and his beautiful companion descended to his dominions, of which he made her queen. Ceres, however, interfered so strongly and so effectually with Jupiter, that he ordered Neptune to permit Proserpine to spend one half of her time on earth with her mother. Pluto was of a very stern countenance, and exceedingly hard-hearted. He was the sovereign head of the infernal deities.

Under him were Minos, Rhadamanthus, and Æacus, whose justice, while in authority upon earth, procured them to be made judges of departed souls, whom they condemned to Tartarus, or consigned to the ever beautiful and delightful fields of Elysium, according to the account they rendered of their earthly actions.

Charon was the ferryman of the river Styx; and as it was necessary for all departed souls to cross that river, the ancients took care to place a piece of money in the hand of the deceased, lest, being unable to hire Charon's services, he should have to wander perpetually upon the bank of the river, unable either to cross it or to return to earth.

The Manes presided over burying-places and sepulchral monuments. The Romans paid them very great respect, and always prefixed the letters D. M., i. e. Dis MANUS, "to the infernal gods," in order at once to propitiate those deities, and to prevent persons sacrilegiously inclined, from violation of the sanctuaries of the dead, whom they thus represented as being vigilantly guarded by the powerful and implacable deities of hell.

The superstition of the Egyptians, though much of it was borrowed mediately by the Romans, and immediately by the Greeks, was as a whole more grovelling and less poetical than those of the two latter people; for the Egyptians carried their idolatrous folly so far as even to worship birds, beasts, reptiles, and vegetables. In the main, however, it resembled in the characters and attributes of its deities the superstitions of which we have already given some account. Its chief deities were borrowed by the Greeks and Romans with merely a change of name and some slight variations in their alleged origin and history.

The principal of the Egyptian deities were Isis and Osiris, and their son Henus. Isis was supposed to inhabit the dogstar, and to be, like Ceres, the goddess of fertility: she also presided over maternal affection. Her husband Osiris had a variety of attributes ascribed to him; and centred in himself the character and actions separately attributed by the Greeks and Romans to Pluto, Bacchus, and Adonis. Osiris was a real personage who reigned over Egypt and was slain by his brother Typhon, and exalted after his death. Henus, the son of Isis and Osiris, was supposed to reside chiefly in the constellation of Orion. The soul of Osiris was supposed to inhabit a bull bearing certain peculiar marks, and called Apis; to which, accordingly, the most extravagant adoration was shown.

Their other deities were Hermes or Shoth, the original of the Grecian and Roman Hermes or Mercury; Anubis the son of Osiris by Nephthys; Amm or Ammon, and Serapis. In addition to these, and their emblematic representations, the Egyptians worshipped the river Nile with very great solemnity and respect, on account of the fertilizing power exerted by it upon their land.

LONDON IN THE REIGN OF ELIZABETH.

To compare the present state of LONDON with what it was in the reign of QUEEN ELIZABETH, is a matter of curious speculation, as it exhibits a display of rapid increase and advancement of the most astonishing description, and which nothing could have effected but the wisdom of its civil polity, the industry and genius of the people, and that spirit of liberty which erected a standard on the spot, that was to become the focus of wealth and power to the whole world.

The MAP herewith annexed will show the diminutive extent of LONDON in the time alluded to, as compared with its present magnitude, and yet at that era it had attained to great renown among the cities of Europe.

The real plan and boundaries of LONDON, previous to the period we are now speaking of, does not appear to have been laid down in any regular map, but the most populous part of the city was on the south side, extending from *Newgate-street*, *Cheapside*, and *Cornhill*, to the banks of the *Thames*; and, besides the small bay at *Billingsgate*, there were also two others, namely, at *Ebbgate* and *Queenhithe*. Cornhill was an open space, and beyond Lothbury, from Basinghall-street to Bishopsgate, a great portion of the ground, with the exception of Coleman-street, and the houses adjacent to St. Augustin's Church, was uncovered, and apparently occupied as gardens. Similar void spaces, but interrupted by buildings, occurred between Bishopsgate-street and Aldgate. At the extremity of the Minories stood a cross, surrounded by gardens, and at a short distance was a tenter-ground. The district called Goodman's Fields, was only an extensive enclosure, and most of East Smithfield was an open space, partly used for bleaching. St. Katherine's appears to have been extended but a short way beyond the church. From the gardens and enclosures immediately attached to the northern side of Whitechapel and Houndsditch, the grounds were merely shaded by trees; and the Spitalfields were entirely open from the back of St. Mary's-spital, which gave them name. Houndsditch was only a single line of buildings, extending in a curvilinear direction from St. Botolph's, Aldgate, to Bishopsgate Without, from thence, a more regular street, but interspersed with openings, gardens, and detached edifices, extended to Shoreditch Church, which was nearly the last building in that direction. Westward from Bishopsgate-street, were a few buildings, the principal of which was a long range, called the Dog-house, with gardens and enclosures intermingled, extended into Moorfields and Finsbury-field, both of which, from the Dog-house to Finsbury-court (near the present Artillery Ground), were entirely open. Moorfields appear to have been used for drying linen. In Finsbury-field both archers and cattle are represented, and beyond it were three windmills, which doubtless gave name to the present Windmill-street. From Cripplegate to Old-street great part was open ground, and from the spot now occupied by St. Luke's Church to Shoreditch there was not a single house, and not more than three or four detached buildings stood in the fields beyond. Chiswell-street was not built, and very few houses in Whitecross-street. Goswell-street was only a road, and described as the "*Way to St. Albans*," and Islington Church was seen in the distance, with a few houses and gardens near it. In Smithfield horses were exercised, and on the west side was a row of trees. Clerkenwell, except the houses in St. John's-street, Cow Cross, and Turnmill-street, was mostly occupied by the precincts of St. John's Priory and St. James's Church.

and only a few detached buildings stood on Islington-road beyond the Priory. From the back of Cow-Cross, towards the Fleet river, and beyond that to Ely House and Gray's-inn-lane, the ground was either completely vacant, or occupied as gardens, and Gray's-inn-lane extended only to a short distance from the Inn which gave it name. Between Shoe-lane and Fetter-lane was much open ground, but from Holborn-bridge to the vicinity of the present Red Lion-street, the houses were continued on both sides; further up, however, to the north end of Drury-lane, the ground was nearly unoccupied, Southampton House standing alone on the right hand. At Drury-lane commenced the village of St. Giles; which was principally confined to a cluster of buildings forming the north side of the present Broad-street; a few other houses stood within the precincts of the church and hospital, which were greatly enclosed and surrounded by trees. Beyond the church, both to the north and west all was open country, and the Oxford and other main roads were distinguished by avenues of trees. From the Oxford-road southward to Piccadilly, called the "*Way to Reading*," and thence along the highways, named the Hay Market, and Hedge-lane, to the vicinity of the Mews, not a house was standing, and those avenues, as well as the upper parts of St. Martin's-lane were bounded by trees. The Mews was walled round, and had the same extent as before the alterations in 1827; but Leicester-square and Soho, and in fact all the country to the north and west was completely open fields. St. Martin's-lane had scarcely a house beyond the church, which nearly abutted on the *Convent Garden*, so called from its belonging to the abbot and monks of Westminster, but afterwards softened into *Covent Garden*. This plot, which was walled in, and extended from St. Martin's to Drury-lane, west and east, and from the back of the gardens in the Strand, towards Long-acre, south and north, had only three or four buildings within its ample bounds, but not a house was standing either in Long-acre or in the now populous vicinage of Seven Dials; nor yet in Drury-lane, from near Holborn to Drury House, at the top of Wych-street.

Nearly the whole of the Strand was a continued street, formed, however, in a considerable degree by spacious mansions, and their appropriate offices, the residences of noblemen and prelates. Those on the south side had all large gardens attached to them extending down to the Thames, and have mostly given names to the streets, which have been built on their respective sites. Spring Gardens were literally gardens partly covered with trees, reaching as far as the present Admiralty, and further on towards the Treasury were the Tilt-yard and Cock-pit, with a square sheet of water behind the former, on the site of the Parade. In St. James's Park were deer, and beyond the north wall stood a few houses about the middle of Pall Mall. Between Whitehall and New Palace-yard, along King-street, and near St. Margaret's Church and Westminster Abbey, the buildings were thickly clustered, and both the Fountain and the Bell Tower are represented in front of Westminster Hall. Beyond the palace gate to the right of Abingdon-street were a few buildings which terminate the plan in this direction.

On the Surrey side but very few houses appear to have stood in the immediate vicinity of Lambeth palace; but on the road opposite to the bridge, in New Palace-yard (which was a sort of stage landing-place), in the neighbourhood of the present Marshgate turnpike, were various buildings. The principal ditch of Lambeth Marsh fell

into the Thames opposite the Temple Gardens, the ground being unoccupied, except by a solitary dwelling.

On the banks of the Thames, opposite Whitefriars, a line of houses with gardens and groves of trees behind them, commenced, and was continued with little intermission along Bankside to the vicinage of the Stews and Winchester Palace. One of the most noted places in this line was Paris Gardens, the site of which is now occupied by Christchurch and its annexed parish, and the boundary ditches of which were open until a very recent period. Farther on, but behind the houses, and nearly opposite to Broken-wharf and Queenhithe, were the circular buildings and enclosures appropriated to bull and bear-baiting (amusements to which QUEEN ELIZABETH was supposed to have been very partial); and near the latter was a dogkennel. From Winchester Palace to the Borough High-street, and along Tooley-street to beyond a small bridge crossing a ditch or rivulet, which falls into the Thames opposite to the Tower-wharf, the houses on both sides were thickly clustered, but towards Horsleydown the ground was open, and the few buildings which stood opposite to St. Katherine's, were intermingled with gardens. London-bridge was crowded with houses, among which, the celebrated *Nousuch*, appeared eminently conspicuous beyond the drawbridge as beheld from Southwark.

The consequence and importance of LONDON, as a commercial port and city, in the time when it occupied only the space described, and as represented in the map annexed, is spoken of by an accurate historian as follows:

"London is one of the best governed, most rich, and flourishing cities in Europe, plenteously abounding in free trade and commerce with all nations, richly stored with gold, silver, pearl, spice, pepper, and many other strange commodities from both Indies. Oils from Caudy, Cyprus, and other places under the Turks dominion. Strong wines, sweet fruits, sugar, and spice, from *Grecia, Venice, Spain, Barbary, the Islands*, and other places lately discovered. Drugs from *Egypt, Arabia, India*, and divers other places. Silks from Persia, Spain, Italy, China, &c. Fine linen from Germany, Flanders, Holland, Artois, and Hainault. Wax, flax, pitch, tar, masts, cables, and honey, from Denmark, Poland, Sweden, Russia, and other northern countries; and a superfluity of French and Rhenish wines, the immeasurable and incomprehensible increase of all which cometh into this city, and the increase of houses and inhabitants within the term and compass of fifty years is such, and so great, as were there not now two-thirds of the people living, having been eye-witnesses of the premises and books of the Custom House which remain extant, the truth and difference of all things aforesaid were not to be justified and believed." So wrote Howe, in 1614.

The incorporation and establishment of the East India Company by a charter granted to the Steel-yard merchants for trading exclusively to the East Indies, gave a fresh impulse to adventure, and concentrated the wealth derived from that lucrative commerce in the city of London; this rapidly growing prosperity, with the protection afforded by the wise laws and liberal government of the country, allureth ingenious manufacturers and mechanics to settle here; or offered a refuge and encouragement to such as were forced from their native countries by bigoted persecutions; hence, the extension and enlargement of the metropolis became a matter of necessity to carry on the manufactures daily springing up, and to accommodate the

withstanding this accession of wealth, and the encouragement of arts, manufactures, and science, there remains still a considerable leaven of the ancient rudeness and coarseness of manners that characterizes a people recently emerged from a state of vassalage and dependency; and even at court the grand faces of refinement, the manners and habits of the attendants, and ministers of the queen were often tinctured with a haughty demeanour, and rudeness of behaviour that could only be tolerated by a correspondent feeling among the courtiers of Elizabeth's train. The costume, gaudy, and often inconvenient, of both sexes, was no inconsiderable proof of the impure taste of those times, but the strongest manifestation of its grossness was in the prevalence of such sports and pastimes as were marked with cruelty, and of such theatrical representations enacted with applause, that have since been deservedly banished from the stage as abounding with allusions and terms far from moral sentiment, and unsuited to the eye and the ear of delicacy. Every thing else seemed to accord with this semi-gothic disposition; the buildings designed for habitation or trade were mostly inconvenient, and the streets of London were narrow and filthy; add to this, the projections of the first floors over the footway, so that in some of those streets or lanes which were not of the leading kind opposite neighbours might nearly shake hands, in greeting each other on particular occasions, by only opening their lattices and stretching out their arms across the little space between them; in the main streets also the distance was very much contracted by the same cause, and the immense number of signboards that were swinging over the public way, to attract dealers to the warehouses of merchants and the shops of the retailers of wares and utensils, &c. Well was it that the fields and vacant grounds were not very far from the city, or the stagnation of air, and its consequent foulness, in the courts and alleys, and other narrow passages, must have been destructive to human life beyond all calculation; these outlets and surrounding fields and gardens afforded an occasional respiration of fresh air, or the inhabitants of London must have perished in the fetid element by which they were surrounded; and in reality this was the case, in the instances of the several plagues and diseases by which the population was at several times attacked, and carried off in great numbers. Some specimens of this contracted manner of building were lately remaining in various parts of the metropolis, especially in Leadenhall-street, the end of Chancery-lane, Fleet-street, and Wyeh-street, which stood on the space now called Pickett-street, near Temple-bar; but they have been removed and the streets widened, to the advantage of trade, the accommodation of passengers, the beauty and elegance of the neighbourhood, the health and convenience of the inhabitants, and the uninterrupted means of communication, and the transit of goods by different vehicles from one part to another, and to and from the various markets of the METROPOLIS.

(To be continued.)

He who thinks in silence, who resists his inclinations but submits to circumstances, who believes his heart but mistrusts his eyes, is fit to live and to die.

He who drinks without thirst, will be forced to diet with a good appetite.

Custom, though ever so ancient, without truth, is but an old

ON THE FEUDAL SYSTEM.

With the overthrow of the Roman empire by the barbarians, there came into Europe a form of government which deserves some remark; and which was, in some measure, a transfer of military forms to civil government and individual affairs.

The king, or chief leader of a nation or horde, apportioned all lands which he conquered, and, in some cases, not only the houses standing, herds grazing, and the flocks feeding upon such lands, but also the rightful though dispossessed inhabitants and owners, to the chief of his subordinate officers; reserving to himself, however, such portion as was sufficient to furnish him with an ample annual revenue. The officers, thus made wealthy by the liberality of their chieftain, became in their turn the source of comparative wealth to their inferiors, among whom they distributed all but the quantum necessary for their own ample support, of that which they had received from their superior; and they conferred this favour upon the same terms as those upon which they themselves had received it; viz., that as they were bound to arm in defence of their superior lord, or in prosecution of his just quarrels, so were their inferiors bound to arm in their behalf, and at their bidding. No system could be more admirably adapted than this was to secure to a nation of conquerors the permanent enjoyment of the fruits of their conquest; for every landholder was thus bound to furnish defence exactly in proportion to the extent and value of his territory, and as all were thus equally concerned in defending the country against the endeavours of the dispossessed inhabitants to regain their rightful property, or against the invasion of those who should desire, in their turn, to oppress the oppressor, treason or lukewarmness was out of the question. From being a merely temporary gift, revocable at the whim or the necessity of the feudal superior, the grant of territory, which was called a fief, became a gift for the life of him to whom it was granted; and then the tenure was rendered still more valuable by being made still more permanent, descending from father to son, the service of course being hereditary as well as the fief. The inferior vassals, however, were still dependent upon their feudal lords, and it thus happened that the latter, after a considerable lapse of time, became independent of their sovereign. For, though they could expel their vassals justly and legally from their fiefs, he had no just right to touch an acre of their hereditary property. Even a powerful king, indeed, was as incapable of doing so as he was destitute of the right; for, as the arbitrary power which he would thus exert upon some one baron, might at any future time, and under any frivolous pretence, be made to fall as heavily upon any other baron, all these made common cause against any such attempt on the part of the king, however much at variance they might happen to be among themselves upon all other subjects. Living in castles, not inferior in strength to those of the king himself, surrounded by a numerous tenantry, who were bound to do their behest, both by gratitude inasmuch as they fed, clothed, and by fear inasmuch as they exercised a despotic power over them, even to the mutilation of limb or the deprivation, some of the barons were singly, and any of them by their alliance with other barons, more than a match for their sovereign. How little the name of king weighed against the united power of several barons, the events of the reign of our own king, John, will sufficiently exemplify. The feudal system, though it was thus excellently calculated to secure the nation against invasion, and the baron and his immediate friends, and connexions against the arbitrary misrule

of the sovereign, was, however, the source of very great misery to the dependent multitude, and the greatest possible obstacle to the improvement of the arts and sciences, and to the extension of trade and commerce. The servant, i. e., the labourer or peasant, could hope for no amelioration of his slavery; and though he ate the bread of his feudal superior, he was also dependent upon his caprice, and subjected to his tyranny. Thus the people at large had neither interest nor impulse to cause them to cultivate their minds; and, indeed, their perpetual liability to military services, would have rendered all impulse and interest inefficient to that purpose. The sovereigns of Europe would probably never have been more than nominally the superiors of their barons, had they not, with excellent judgment, allowed them to pay certain sums of money, in lieu of giving their personal service in the field at the head of their armed retainers and vassals. With the money thus acquired the kings hired foreign mercenaries, by whose means they soon reduced the barons to comparative subjection. Even this would possibly have *only partially* subdued the proud nobility had their extravagance not have caused them to sell large portions of their estates to several persons. Large, and therefore powerful baronies, were by this means deprived of their strength; for each portion they sold became the property of a person totally unconcerned as to the political fate or condition of all the persons who had purchased the other portions.

With the greater portion of their territory the nobles were obliged, of course, to part with the greater number of their retainers, and were thus rendered unable to be oppressive to their inferiors, or insolent to their sovereign, as they had been accustomed to be, and to delight in being. Thus their turbulence, and that of their dependents, were gradually exchanged for a peaceable demeanour and a more economical mode of life; and where there had been perpetual strife and outrage, industry and calmness predominated.

The introduction of standing armies has rendered every nation as well provided with the means of resisting foreign invasion as they were under the feudal system. Whether, in countries where liberty is not thoroughly understood and enjoyed, they may not be made the instruments of domestic oppression, is a question for the discussion of which this is not the place. To our readers, indeed, the question is not very important; for, as we have the finest standing army in the world, so we enjoy liberty to an extent almost unimagined by less favoured nations.

THE PROGRESS OF MANNERS AMONG THE ROMANS.

THERE is much both of amusement and of instruction to be derived from an attentive perusal of Roman history. We perceive a mere handful of adventurers founding a city, which, from such small commencement, rises by the mere force of the discipline, courage, and temperance of its inhabitants, to the highest rank among the nations of the earth. We perceive that when the regal power, which was originally instituted for the advancement of the interests of the state, had grown into an evil tyranny, the public spirit was depressed, and merit entirely neglected. Indeed, merit sought concealment; for when tyrants are in power, the good and the great are perpetually made the objects of persecution. The kingly power had long been oppressive to the people, when the abuse of the virtuous Lucretia by Sextus Tarquinius, and the able conduct of

the Romans, caused the Roman people unfeignedly to desire expelling the Tarquins and establishing a new form of government. This was effected by the people, and two consuls were intrusted with the command of the army; and who made room every year for the election of two new ones. With the vices and extravagance of the Tarquins the love of debauchery and effeminate manners increased, as if by miracle, to be suddenly removed by the death of the kings. Virtue, talent, courage, and patriotism came forth from their retirement, and the whole Roman people seemed to vie with each other in endeavouring to exalt the name and promote the real interests of their native land. Instead of the love which had prevailed during the reign of the kings, for costly apparel and effeminate ornaments, there was now among the Roman youth a desire to possess excellent horses and armour, and to have keen weapons, and a perfect mastery and skill in the use of them. Their hours of profound peace were spent in exercises so violent and strenuous, that, except in the absence of actual bloodshed, their fatigues and endurances in peace, were in no wise inferior to those which were attendant upon war. In war, they desired no reward so much as the applause of their fellows and the praise of their leaders, each striving to be the foremost in reaching the post of danger, and the author of the greatest amount of mischief to the foe. For wealth they cared but little, for how could men whose lives were one long struggle to serve the public, and who made it almost a matter of religion to abstain from luxurious entertainments; how could such men employ wealth? But the Romans, unlike their contemporaries, and glory after death became their most valued objects, for these they braved all dangers, spurned all difficulties, defied all dangers, and overcame all obstacles; for these they watched and fought, and when they performed deeds so great and so importantly distinguishing, that the republic grew every day more extensive in territory, more powerful, more famous, and, *unfortunately*, at last, more wealthy.

Our readers will perhaps wonder that we impute the fault to Rome that she increased in wealth, but they will presently perceive that we have just ground for doing so. While the Romans were perpetually engaged in subduing foreign foes, their morals were as excellent as their courage was conspicuous. United among themselves, the only dispute was who should most essentially serve the commonwealth, and, their hardy and ever-active spirits, rendering all mere luxuries perfectly superfluous and contemptible to them, and while their temples and public buildings bore evidence of their magnificent liberality, their houses and their apparel bore equally strong evidence to their frugality and self-denial. But, when Rome had become the conqueror of many nations and when the rich spoils of those nations filled her capital and glistened in the eyes of her youth, riches begat luxury and love of ease, and these in their turn begat vice and extravagance. Avarice now became as conspicuous as dishonesty, which had formerly been; and self-enjoyment and idleness took place of public spirit and active industry. Wealth too came contempt of virtuous poverty, and instead of virtuous sufferings, riches were sought as the means of indulging in effeminate and luxurious enjoyments, and almost every description began to be practised as the means of acquiring riches. Overgrown wealth begot insolence in the wealthy, and servility in the poor; and again learned to flatter and cringe to those above them, and crush them beneath them, as they had been accustomed to do during the wicked reign of the Tarquins. From the general corruption of the people there soon fol-

lowed a similar corruption of the government. Consuls were elected, not for their wisdom or probity, or long experience in public affairs, but for the vastness of their wealth, and the extravagance of their bribery. From preferring to be good, rather than to seem so, the people had now become equally careless as to being and keeping. To be rich was sufficient, for, while no virtue was sufficient to cause a poor man to be respected, there were no crimes so infamous as to be deemed unpardonable in the possessors of great wealth. It was by witnessing the effeminate and degraded state of the citizens of Rome, that Sylla and his victorious troops were encouraged to become the oppressors of that state which they had defended, and whose arms they had victoriously wielded beneath the fierce and scarcely supportable sun of Asia. Accustomed, during their sojourn in that luxurious climate, to indulge themselves in every kind of excess, and to take by force whatever they desired to possess, Sylla's soldiers were well prepared to second the ambitious and daring views of their leader, and each seemed to consider himself bound to follow the example of his chief in desiring all that he saw and forcibly take possession of, till that he desired.

Luxury and riches we thus perceive, effected that which all the power of hostile armies had been insufficient to effect, and Rome from being the most virtuous, became the most abandoned of nations. While individual poverty was esteemed rather as being honourable than as being disgraceful, there were neither temptations nor means of vice in the power of the Roman youth. But when the general corruption of the ancient manners rendered each citizen desirous to proportion his style of living, his houses, his equipage, his table and his apparel rather to the appearance and fortune of his neighbour than to his own means, embarrassments or the fear of them, drove the Roman youth to the invention and commission of the most detectable crimes. While they possessed property they exercised a vicious and curious ingenuity in squandering it. Earth, air and sea were insacked to supply their table with dainties, which then palled and vitiated appetites hindered them from enjoying every article of their apparel was the produce of some different foreign land, nothing was considered wholesome which was the production of their own land, and nothing was allowed to be elegant, unless its price was ruinously enormous or shamefully disproportioned to its real use or intrinsic value. When by such a course they had utterly exhausted their means the horror of returning, as a matter of necessity, to that simple, frugal and healthy fare which their forefathers had accustomed themselves to, as a matter of choice, was far greater than the principle of honesty or detestation of criminality, and in order to obtain fresh means of idleness and luxury, they degraded themselves by the practice of the most scandalous, disgraceful, and degrading vices. All love of country, of freedom, and of fame, was lost in the general corruption, and the foundation was thus laid for the future ruin of that Rome upon which the world had gazed in wonder and in awe.

Thus, our readers perceive, that riches may be injurious, not only to individuals but even to powerful kingdoms for if Rome fell by excess of luxury and subsequent vice, what nation is so powerful as to be able to resist their baneful influence?

GUIDE TO KNOWLEDGE.

EDITED BY MR. W. PINNOCK,

AUTHOR OF "PINNOCK'S CATECHISM," "GRAMMAR OF GEOGRAPHY AND HISTORY," ETC., ETC.

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L O N D O N .

We have already given to our readers a brief description of LONDON in the time of the ROMANS, and also in the period of the reign of QUEEN ELIZABETH, in both of which eras, we had to view it in a comparatively infantile state ; and though it had acquired strength and importance, to a considerable extent at the latter period, yet it was still but in an adult condition, destined, however, to become what it now really is, a GIGANTIC EMPORIUM of wealth, power, and magnificence, among the cities and ports of the WORLD.

Commerce and enterprise have unquestionably been the primary and fundamental causes of its vast increase in extent and population ; and it is apparent that as these have enlarged, the METROPOLIS has been extended and proportionably enriched. The voyages and adventures of various navigators, and the discoveries which they made, opened new sources of trade, and the passage to India, by the Cape of Good Hope, ultimately laid the stores of that prolific country at the will and disposal of the British merchants, and at the same time instituted a demand for the manufactures and mechanical productions of this country, unexampled in any former age. With riches refinement advanced, arts and sciences were nurtured, and successfully cultivated, and true taste began to embellish the system of society ; these acquisitions, aided by the freedom of the government, and the prevailing influence of a mild and pure religion, have, in our day, constituted LONDON what it now is, the first city in importance on the whole globe. Our MAPS will give a sort of *coup d'œil*, or visible display of the enlarged boundaries of the metropolitan suburbs ; but to give the stranger a full description of this magnificent city, and its dependencies, would require volumes of no ordinary size ; and, therefore, all we can do, in this work, cannot exceed an epitome of some of the most prominent ornaments, and institutions with which LONDON is so amply adorned. Before we proceed to do this, we notice the great improvement lately adopted of widening the streets, increasing and enlarging the common sewers, and that attention to cleanliness which adds greatly to the salubrity, as well as the beauty and splendour of the whole continuity of streets and buildings.

Within the last half century, many acres of ground have been covered with houses, and other edifices, long and elegant streets have branched out in various directions, and the prognostications of former speculators, that London would have absorbed its surrounding villages, have been literally fulfilled. If we look to the east, we perceive that Ratcliffe, Shadwell, and even Poplar and Blackwall are no longer out of town. Mile-end, Bethnal-green, King'sland, and Hoxton, and also Hackney, now connect with the metropolis ; northward and westward Islington, Pentonville, Clerkenwell, St. Pancras, Kentish Town, Somers Town, &c.

Paddington, Knightsbridge, Brompton, Chelsea, the village of Charing and Westminster, all distinct districts a century ago, are now part and parcel of the suburbs of LONDON : over the Thames, Lambeth, Kennington, Newington, Walworth, Bermondsey, and Rotherhithe, are now included in the suburbs ; and even Deptford and Greenwich are so contiguous as scarcely to be distinguished apart from the unbroken extent of building. How many fields, orchards, and gardens have been converted into building grounds and public streets, is not easily calculated ; and whether in some instances their destruction be not matter of regret, is rather problematical.

So long back as the reign of Elizabeth, 250 years ago, the British metropolis was considered to be overgrown, and England was compared to a rickety child, with a head too large for its body ; how much this head has swollen since that time, a comparison of our maps will show ; but fortunately the limbs of the empire have strengthened and enlarged accordingly, and the whole body politic seems to be in as sound and healthy a state as at its former youthful period, and quite as well proportioned ; the fact is, that anciently England relied principally on her own resources for the sustenance of her population, because commerce was limited, but now the productions of every country and every clime are, by her extensive trade, made subservient to the purpose of human support, which the superior genius, industry, and skill of her citizens will command as long as due encouragement shall be given to their various operations. We have before given a full account of the noble bridges over the Thamer, and said something of other stupendous erections, but these are a few more particulars remaining, that may come within the compass of our limited observations as necessary accompaniments with our full MAP of LONDON now presented herewith. The municipal government of this ancient city is under a lord mayor,* and alderman of the different wards, into which the city is divided, being twenty-six in number ; each alderman is a magistrate within the jurisdiction of the city, and the offices for public justice are at Guildhall and the Mansion House. That part of the metropolis, out of the city, has police-offices established, with magistrates appointed, and who are paid by the county for their attendances ; these offices are at Bow-street, Covent-garden ; Queen-square, Westminster ; Marlborough-street, High-street, Mary-le-bonne ; Hatton-garden ; Worship-street, Shoreditch ; Lambeth-street, Whitechapel ; High-street, Shadwell ; Union-street, Southwark ; and Wapping New Stairs, for offences connected with the shipping and port of London.

The courts particularly under the authority of the lord

* The history of the election of lord mayor, &c., we have given at length at page 177 in this work, to which the reader may refer, as we have ourselves not preserved any record of the services

mayor, are the Court of Aldermen, for the regulation of city affairs; the Court of Conservancy, held four times in the year, in Middlesex, in Essex, Kent, and Surrey, to make inquiry by jury into abuses relative to the fishing on the river Thames, and to prevent any encroachments on its free navigation: the jurisdiction extends from *Staines*, westward, to *Yenfleet*, below Gravesend, eastward. The Pie Poudre Court, held during Bartholomew Fair, for the redress of grievances, and repressing disorders incident to that fair only; its proceedings are quite local and summary, adjusting all differences between buyers and sellers with instant dispatch, and its existence terminates with the fair.

The Court of Session for the city of London, held at the Old Bailey, where the recorder acts as judge in criminal cases, arising out of offences committed within the limits of the city and its jurisdictions: properly the Lord Mayor is the presiding magistrate, the recorder being an assessor or legal assistant in his judicial capacity. Besides these, there are the Courts of Requests, and the Chamberlain's Court; the former for the recovery of debts under £1., and the latter to admit those who are duly qualified to the freedom of the city to bind apprentices, and to settle any differences that may occur between them and their masters. The Lord Mayor's Court is a peculiar city court, for actions of debt and trespass, and for attachments on property to secure payments to creditors from such effects as are to be found within the city, belonging to the debtor: this court is held at Guildhall, where also the Sheriff's Court is open every Wednesday, Thursday, Friday, and Saturday; those days not being appointed holidays. Several other courts are held in, and connected with the city, but they are not immediately under the city authorities; those are the Admiralty Court at the Old Bailey, and Doctors Commons, the Ecclesiastical Court, at Doctors Commons; the Courts of King's Bench and Common Pleas at Guildhall, and the Insolvent Debtors and the Court of Bankruptcy.

The Court of Common Council consists of the persons chosen yearly on St. Thomas's Day, to fill that honourable station; in each of the twenty-six wards, which with their representations are as follow:

1 Farringdon Within	17
2 Ditto Without	16
3 Bishopsgate Ward	14
4 Bread-street ditto	12
5 Cheap ditto	12
6 Tower ditto	12
7 Broad-street ditto	12
8 Langbourn ditto	10
9 Cripplegate ditto	16
10 Castle Baynard ditto	10
11 Billingsgate ditto	10
12 Vintry ditto	9
13 Dowgate ditto	8
14 Candlewick, or Cannon-street do	8
15 Cordwainers ditto	8
16 Walbrook ditto	8
17 Aldersgate ditto	8
18 Cornhill ditto	6
19 Aldgate ditto	6
20 Queenhithe ditto	9
21 Coleman-street ditto	6
22 Portsoken ditto	5
23 Lime-street ditto	4
24 Bassishaw ditto	4
25 Bridge Ward Without, unrepresented	15
26 Bridge Ward Within	

In all, in the 26 wards, 245, and these constitute the whole body of the COMMON COUNCIL of the city of LONDON. Bridge Ward Without having no representation, is commonly placed under the senior aldermen of the other wards, and is a sinecure of some value. The civil government of SOUTHWAVER is under a bailiff, who is appointed by the lord mayor and aldermen of London, but it has never been incorporated with the city.

The Court of Common Council has very extensive powers, it being their province to make bye-laws for the management of city affairs, and to alter or abrogate such as they deem inexpedient or improper; they also nominate to several of the subordinate offices. They annually select six aldermen and twelve commoners for letting the city lands; they also appoint another committee of four aldermen, and eight commissioners, for transacting the affairs of Gresham College, the lord mayor being always one of the number. They also choose a governor, deputy, and assistants, for the management of the city lands in Ireland; which lands lie in the province of Ulster. Some idea may be formed of the vast extent of trade and commercial affairs, as well as of the transfer of property, and the spirit of business, by the fact, that more than 8000 admitted ATTORNEYS and SOLICITORS find employment within the limits of the METROPOLIS, in the exercise of their profession. But if this were not a fair criterion whereon to form a judgment, let the most sceptical person take a passage by the Thames from London-bridge to Greenwich, and observe the continued forests of masts which he must go through for several miles, and which the merchant vessels present, and then he will be convinced, were he hitherto ever so incredulous, that the description of this mighty city has not been exaggerated. If we turn westward, our surprise will not be less excited by the grand squares, the noble streets, the splendid mansions of the nobility, the number of well-dressed persons that rambulate those spacious streets and squares, the elegant and copiously stocked shops, and the sumptuous equipages that roll along in ceaseless succession like triumphant chariots, attended by servants in gorgeous liveries, and drawn by horses of the finest breed, and highest mettle of any in the world.

This vast metropolis contains upwards of seventy squares, some of them most magnificent, and most of them laid out with shrubberies, gravel walks, parterres, and trees, and are free to the inhabitants of the houses that surround them; upwards of 10,000 streets, and about 250,000 buildings; though these cannot be accurately computed, because they are yearly increasing, and the spirit of improvement is making annual alterations. Our readers will see by the Map, not only the dimensions and divisions of LONDON as it exists at this time, but also the representation of the improved and enlarged public streets, &c.: and to give a proper idea of the extent of a few of the most noted, we subjoin the following list and measurement:

IN LONDON

Bishopsgate-street	1045 YDS.
Fenchurch-street	654
Lower Thames-street	400
Upper Thames-street	1331
Gracechurch-street	357
Lombard-street	374
Cornhill	286
Cheapside	368
Aldersgate-street	456
Fleet-street	610

WESTMINSTER.	
Strand	1369
Haymarket	357
Pall Mall west	660
Regent-street	1730
Oxford-street	2304
St. James's-street	385
Piccadilly	1694
Bond-street	990
SOUTHWARK.	
Tooley-street	972
High-street, Borough	781
Blackman-street	390
Great Surrey-street	1193
SUBURBS.	
City-road	5115
New-road	1690
Shoreditch	715
High Holborn	1045

The churches and other public edifices, are mostly built with stone, and numbers of them, if they stood alone, or in some inferior town, would be celebrated for beauty and elegant architectural taste; but their grandeur is mutually eclipsed by their proximity to each other, and many of them are placed in secluded situations, or so hemmed in by houses, as to be generally overlooked; an instance of this may be observed with respect to St. Martin's church, near Charing-cross, which, till lately was thus enclosed; but being now laid open, by pulling down the old houses, exhibits a beautiful front and portico, with a symmetrical steeple, and pile of buildings that present a pleasing object to the eye, and which contributes in no small degree, to raise in the mind of the spectator a reverence for the sanctified purposes to which those sacred temples are appropriated. The houses and warehouses are now, for the most part, built with bricks, and are in general uniform, convenient, and handsome; and in consequence, there is scarcely a wooden house remaining. Some of the recent erections, especially in the outskirts and modern squares, have stuccoed fronts, or cement, in imitation of stone, which gives them a cleanly and rather superior appearance.

The representation of the *City of London* in the national senate is by four delegates, who are citizens, and chosen by the liverymen of the various companies, or guilds; this has long been the practice; but, by virtue of a *Bill* lately passed, commonly called the "*Reform Bill*," all householders paying scot and lot, and renting houses of 10*l.*, and upwards, annual value, are entitled to the elective franchise, and may vote for their favourite candidates. The number of liverymen voters is about 14,000, but the electors are greatly augmented in number by the recent extension of the privilege. The present members are G. GROTE, Esq.; M. WOOD, Esq.; ROBERT WAITHMAN, Esq.; and SIR JOHN KEY, Bart.; the three lastmentioned are also aldermen of *London*, and long esteemed for their liberal principles, and distinguished information, as well as commercial intelligence and eminence: the firstmentioned gentleman was placed at the head of the poll, at the last election, which circumstance, among the most enlightened constituency in the world, is, in itself, a panegyric which we are inadequate to describe, especially as he was a new candidate; though, unquestionably, well known to his fellow-citizens, as possessing a well-cultivated and highly enlightened mind, and inflexible disposition for integrity and justice. The guardianship of

the city of *London*, which was long committed to old men called *watchmen*, who perambulated their separate beats and called aloud the hour of the night (many of them superannuated), has been changed, and assimilated to that of the districts around, which are under the direction of commissioners, and by an effective force of active and able-bodied men, who patrol the streets day and night, and whose business it is to protect the inhabitants, and to keep peace and order in the public ways, as well as to prevent burglaries, robberies, and thefts, and to apprehend those who commit them; but the act of parliament, for this wise regulation, not affecting the city, the plan was for some time opposed, but ultimately adopted, under the management and control of the aldermen and common council of their respective wards. Since this system of police has been established, the broils and outrages, and what were called *rows* in the streets, are now almost abolished. Perhaps no city in the world can vie with *London* for places of education, and institutions for the general diffusion of knowledge, besides the schools of all denominations, both for the rich and poor; the latter supported by subscriptions, and the former conducted by masters of high attainments, and eminent for talents; there are now two colleges instituted under the most distinguished patronage; and the daily and weekly publications, which are numerous, abound with information calculated to give intelligence to all; and to afford that enlargement of intellect and enlightenment of the mind, which will tend to constitute an age of reason and moral refinement more efficacious in promoting social order and obedience to the laws, than the rods of ten thousand lictors, or the swords of confederated despots. Of the various schools, *St. Paul's*, *Merchant Taylor's*, *Christchurch*, *Westminster*, and the *Charter-house*, are the chief; but there are many others of great repute and usefulness.

The *hospitals*, almshouses, and other public charities, are numerous, and evince a benevolence and charitable sentiment, highly honourable to their supporters, and to the memory of those by whom they were founded, or who have contributed to their permanency and usefulness; and, in every parish, workhouses are established to receive the destitute and infirm, so that scarcely a mendicant needs to be seen soliciting alms, unless in some extreme case, or through a repugnancy for the regulations of a pauper asylum, in which case, the trade of a beggar must be more of a choice than necessity.

One of the greatest blessings that the people enjoy in the metropolis, is the abundant supply of clear and wholesome water; there are many pure springs, and many more might be found by digging for that purpose; but the supply from the *Thames*, the *New River*, and the *Grand Junction Canal*, at *Paddington*, renders the attempt unnecessary. The *New River*, which was cut at the private cost of *SIR HUGH MIDDLETON*, conveys water from a marsh, near *Ware*, in *Hertfordshire*, to a head, or reservoir at *Islington*. The patriotic and benevolent *SIR HUGH* spent his fortune and was ruined by this undertaking but the company, into whose hands it fell, has derived an immense profit from the rates charged upon the extensive districts which they supply. The *Thames* water is esteemed, beyond all others, for the supply of the shipping, as it possesses a peculiar quality of self-purification, and becomes sweeter and clearer than at first, by keeping; it, however, by that means, deposits a considerable sediment, which contains much vegetable and earthy matter. The *waterworks* on the *Thames* are the *West Middlesex*, at *Hammersmith*; the *Chelsea-waterworks*, about a

quarter of a mile east of the hospital; the *Lambeth Company*, between Westminster and Waterloo bridges; the *South London*, at Vauxhall; the *Southwark-waterworks*, below London-bridge; and the *Paddington*, which last also replenishes from the Thames. A singular prejudice existed for a long time, in many of the British provinces, that porter could not be brewed with any other water but that of the Thames, this odd conceit, however, has vanished, by the best possible conviction, that of experimental demonstration.

The lately constituted metropolitan boroughs, are, by the Reform Bill, entitled to send each two members to parliament. These boroughs are the *Tower Hamlets*, *Finsbury*, *Mary-le-bonne*, and *Lambeth*. *Greenwich* has also been enfranchised, and the County of Middlesex elects, as usual, two knights of the shire; so that the metropolitan interests are sustained in the national council by sixteen representatives, including the city and borough of Southwark; and, considering the property contained in Middlesex, and also its population, that number is, probably, not more than a fair proportion. When we look at London, in its extent and the number of its inhabitants, we are apt to wonder from whence such a multitude of human beings can be supplied with provisions; but when we traverse the markets, or observe the droves of sheep and cattle, that are constantly pouring in from the country, as well as vegetables, and other culinary articles, and the *esculents** daily exhibited for sale in the shops, we change the idea, and wonder how such a stock can be regularly consumed. To enter upon a detail of all that concerns this wonderful city is not within our means; such a work might be desirable, but would take years to accomplish, and volumes to contain, we therefore conclude this short outline, and quit our remarks on LONDON, with this exclamation, "Esto pérpetuo!" †

OF THE ARTS AND MANUFACTURES OF VARIOUS NATIONS.

SECTION I.

It is, we should imagine, quite unnecessary to inform our readers that in the state of a country's arts and manufactures we have a very excellent and important criterion by which to judge of the kind and degree of its civilization.

Both arts and manufactures are, generally speaking, but very little known among savages. This partly arises from their want of those theoretical principles which the practical men of more enlightened countries find so exceedingly valuable to them. But it may, in a great measure, be traced to the practice which obtains among them of each man manufacturing for himself all the articles he wants, however dissimilar the uses for which they are required, and the process by which they are manufactured. The consequence of savages engaging thus in *all* kinds of work is, naturally, that they perform *none* well. The same hand shapes the canoe and the hatchet; and manufactures the rude spear and wields it for a subsistence. Though savages are on this account, *apparently* at least, much more independent upon each other than civilized men, yet they are proportionably poorer, more helpless, and more destitute of resources. Destitute of arts and manufactures, they can neither produce in per-

fection the articles they most need, nor enter into profitable commerce with the nations which could supply them with those articles.

In some of the *civilized* countries which are of very considerable extent, and peopled but scantily, the inhabitants are compelled to follow the example of savages in the multiplicity of their occupations. In such countries there is always some one occupation of such paramount importance to the inhabitants, that no considerable number of them can be exempted from taking a part in it, in order to apply themselves to the exclusive practice of the handicrafts which supply men with their implements, utensils, clothing, &c. In Norway and Russia this is very observable. In those countries the great majority of the working population are obliged to attend to agriculture, mining, or felling and transporting the trees with which their vast forests abound. The consequence is, that there are scarcely enough of home manufactures to supply the wants of the opulent, who can give a good price for the various articles of which they stand in need; and the peasantry are obliged to make for themselves almost all the articles which they require for the assistance of their labour, the clothing of their persons, or the furnishing of their houses. When persons are thus driven to a multiplicity of occupations, the necessary consequence is, that they do nothing well. Every article they produce costs four or five times the labour it would a person whose chief occupation lay in the production of it; and, notwithstanding this excess of labour, is but a very inferior article after all.

There are two grand requisites to perfect art, and to make it productive, viz., the division of labour and excellence of tools and instruments. In some half-civilized countries, which support a very dense and numerous population, the labour is divided among many hands; but the instruments and tools are exceedingly imperfect. The silk and cotton goods of India and China are admitted by all writers upon statistics to be incomparably superior to goods of the same description manufactured in any other part of the world. But they are the production of a vast term of time and human labour. The machinery so useful and so familiar in this country, is there wholly unknown. The Indian weaver works in the open air, and his machinery consists principally of small stakes, which he sticks into the ground, and to which he fastens his threads. His simple machinery has to be removed every time he ceases to work, and to be replaced every time he resumes it; and though thus troublesome, scarcely affords him any assistance. Thus, although the workmanship of the silk and cotton fabrics be universally acknowledged to be superior to that of the productions of all other countries, we must at the same time observe, that the natives of India can by no means pretend to compete with European nations in the rapidity of production. They are more especially inferior in this respect to England and France, in which countries steam and other mechanism are now arrived at such perfection, that inanimate matter might seem, to a savage, to be gifted with perception, intelligence, and volition.

Japan and China are superior to the other half-civilized countries, in the perfection to which they have brought their tools and instruments. But, even these countries are greatly inferior to France, and still more so to England. The half-civilized nations, in which the advantages arising from the division of labour are understood and secured are infinitely superior, on that very account, to savage and barbarous nations, both in the quantity and

* Such things as are eatable.

† Be thou ever lasting.

The quality of their manufactures. But, from the inferiority of their tools, they are in some degree, inferior upon those points to the less-civilized nations of Europe and America.

In these countries alone it is that the tools and instruments of various handicrafts and the implements of agricultural labour are brought to even a tolerable state of perfection. As in addition to this superiority, these countries likewise possess a greater knowledge of the advantages to be derived from a division of labour, and as they act more largely and more justly upon it they are superior to all others in the quantity, as well as in the quality, of their manufactures. Moreover, as they are densely populated, a large proportion of their inhabitants find it both useful and necessary to apply themselves to handicrafts in preference to agricultural labour.

Savage and barbarous nations can barely supply themselves with the necessary articles of manufacture; and even half-civilized nations export only those manufactures of which the staple, or new material, is peculiarly the product of their country, or found there in the greatest abundance and perfection.

But in the civilized nations of Europe and America the inhabitants not only manufacture sufficiently for their home consumption, but also for an immense exportation; and thus, without having to endure the burning climate or despotic government of China, they are enabled to secure an abundant supply of its silks, and its salubrious shrubs; and without encountering the biting blasts of the frigid north, they are able to procure an abundance of its most beautiful and useful furs.

England, France, and the United States of America, surpass all the other civilized nations in their machinery; and England may, without the least tincture of individual or national prejudice, be said to stand at the head of these three powers. Freedom has given both opportunity and encouragement to our men of science to devote their attention to the improvement of implements and machinery, and the wide diffusion of knowledge, a diffusion so wide, that it is scarcely hyperbolical to call it universal, has rendered the studies of the scientific and theoretical inquirers available to the practical and laborious artisans. From the plough to the vast and wonder-working steam-engine, every article of our machinery has more or less engaged the attention of our men of science, and been improved according to their suggestions. The consequence is, that we are superior in the construction of machinery. It is, indeed, astounding to observe the effects of machinery in some of our great manufactures; as, for instance, at Manchester and Birmingham. A single, and, taking its effects into consideration, by no means complex machine, will, at a small consumption of fuel and water, and with the attendance of two or three men, perform the labour which in the same space of time two hundred men would barely be able to accomplish! Nor is this vast amount of labour performed in a slovenly or uncertain manner. Contrariwise, its perfectness is equal to that of the work of man's hands, and its uniformity greater than that which manual labour, however skilfully performed, is susceptible of.

To the great, the amazing, as well as beneficial perfection at which some civilized nations, and particularly England, have arrived, very many causes must conduce.

But the grand foundation of the arts themselves is to

be looked for in art to which superficial observers would, by no means, attribute an effect so important viz., that of the *working in metals*. So important is this art, that it may be safely doubted, if, but for it, mankind could ever have arrived at any considerable degree of wealth, or of perfection in the arts, by which wealth and comfort are procured.

It is well known that in some countries of which the soil is by nature exceedingly productive, and of which the climate is proportionably favourable, the inhabitants are obliged to remove from place to place, on account of their inability to render any one spot sufficiently productive to afford them a constant supply of the necessities of life; and that among some people not addicted to roving habits, the earth, though by nature sufficiently fertile, is comparatively unproductive, on account of the very superficial manner in which it is tilled.

The condition of England, for instance, would be wretched indeed, had we only such ploughs as are in use among most of the nations bordering on the Mediterranean, i. e., a heavy and crooked log of wood, drawn along by oxen, yoked to it by their horns. As it is, it is impossible for us to raise in England a sufficient supply of grain; but if our agriculture were at as low an ebb as it is in the countries to which we have just alluded, we should be wholly dependent upon foreign nations for our grain, and should thus lose much of the benefit we now derive from our manufactures, and be, which would be still worse, deprived of a very great portion of our national independence, power, and influence. Now, though we are undoubtedly under immense obligations to those men of science, who have devoted their time, talents, and attention, to the improvement of the theory of agriculture, we must not overlook the fact that, but for the art of working in metals, their improvements would, for the most part, have remained mere theory. They might have clearly enough convinced us, that if we could turn up the ground to a certain depth, and plough into the soil a certain kind of manure, a chemical effect would thereby be produced, which would cause the crops to be very abundant, and yet prevent the earth from being unduly exhausted. But of what use, unless, indeed, it be useful to be tantalized with the distant view of an unattainable benefit, would the conviction of the truth of their theory be to us if we were destitute of the means of regulating practice by that theory. We might consume our entire lives in dragging a crooked mass of timber along the stubborn earth, without making an inch of progress towards proper tillage; and to the crooked piece of timber, or some equally inefficient and clumsy implement, we, as well as other nations, should be confined, were we not masters of the invaluable art of working in metals. Agriculture being the most important of all the arts of civilized man; and, as it were, the nursing mother of all the other arts, the fact of the art of working in metals being essential to its perfection, is sufficient to show us that we owe much of our wealth, civilization, and enjoyment, to the power of forming and fashioning the metals into implements fit for our various purposes. An art so important is possessed in perfection by none but civilized nations; and the more highly civilized a nation is, in the greater perfection does it possess and practice it.

Savage nations are for the most part utterly unacquainted with this invaluable art. The little of it which is known to some few of the savage tribes, they have acquired by their brief and infrequent intercourse with Europeans. So little, indeed, is it practised even by these

* TEA; which though introduced into this country at a comparatively recent period, may now be said to be the universal morning and evening beverage.

GUIDE TO KNOWLEDGE.

few, that we might have very safely said that all savages are destitute of it; but in a work of this kind the chief merit is correctness of detail, and we are anxious to possess that merit in the highest and most strict degrees possible.

The skilful and intelligent artificers of civilized nations would smile at the process of barbarous manufactures. Barbarous nations indeed produce some articles of very beautiful workmanship, and well adapted for the use for which they are designed, but they are enabled to do so at an enormous expense, not to say waste, of time and labour.

Not only are their implements few in number and very imperfect in kind, but the artisans have so many different kinds of work to attend to and complete, that they cannot possibly have that quickness and adroit skill in them all, which our workmen have in the one particular line to which their attention and exertion are perpetually devoted. We in England would smile at the blacksmith who should propose to make us a watch-chain, or a box of filigree work in gold; and we should look but incredulously upon the person who should solicit us to favour him with employment both in mending the movements of a watch, and in manufacturing new coulters for a plough. But in barbarous nations, the artificers who work in metals, combine branches of work by no means less dissimilar and incompatible than these. He who works in copper, works also in iron and in gold; and the most massive implements, and the minutest and most delicate trinkets, are manufactured by the same person, and in a great measure with the same tools. These tools are not only rude and clumsy, but very few in number; consisting principally of a hammer, anvil, and a bag for blowing the fire.

The separation of metals from their ores is practised by every nation which is so fortunate as to possess at once mines and the happiness and advantage of civilization. But in those countries which, though they are possessed of mines, are but scantily peopled, this is almost the extent of the labour they can afford to bestow upon their metals. Such is the case in Sweden, Norway, Russia, and America, which countries export their metals in an unwrought state and merely separated from the ore. The only manufacture of metals in such countries is such as is encouraged by the fondness of the wealthy and luxurious for trinkets and ornaments, and by the necessity which the laborious population has for implements of husbandry and tools, and the consequent demand and ready sale which these articles meet with. Improved as the United States have within the few years become, in all the arts, and rapidly as their population has increased, we ought, perhaps, to except them from the above remark; for though they are at the present time, and in all human likelihood will long continue to be, almost entirely dependent upon other countries for the finer and more delicate articles of metallic manufacture, yet in the manufacture of the useful and massive kind of articles they have arrived at very considerable perfection.

South America, however, is not so manifestly improving. Indeed it cannot fairly be hoped or expected, however much it may be wished, that it should, from the withering effects of the despotism under which this beautiful, but long-suffering country has groaned. In South America both the remaining effects of the old tyranny, and the jealousies and tumults of a people, scarcely civilized enough to deserve or to know how to use so precious a possession as liberty, combine to prevent the arts from being fostered by the great, or practised industriously, and upon sound principles, by the laborious. Gold and silver are still exported

in ingots, bars, or the coinage of the country; and some of the gold thus exported from that country is reimported into it in the new forms given to it by the ingenious artisans of Europe. This one fact speaks volumes to us, as to the loss sustained by South America by the non-cultivation of the arts. In the very transaction in question there is an obvious loss; for having received a certain sum in merchandise for a bar of gold, they give still more gold for that *selfsame gold*, or even for a less weight of gold, which has received its additional value merely by the labour of foreign artisans. If South America, then, makes a profit of selling bars of gold for our merchandise, it would obviously be still more profitable for that country to give, by *native skill*, that additional value to the gold which, under existing circumstances, is given, and profited, solely by foreigners.

This fact ought to be well pondered by our young readers; for pondered by an intelligent and patient mind, it contains an immense store of wisdom upon the most important political topics.

Mexico is said to be an exception to most nations similarly situated; not so much in the extent, as in the skill with which its artisans who work in metals, acquit themselves. Imperfect as the Mexican tools are, the workmen, by great ingenuity, patience, and industry, contrive to produce vessels and trinkets, quite equal to those of most nations of Europe.

China, Japan, India, and the Asiatic Isles, also produce some very fine workmanship; but their tools are so bad that they are only enabled to do so at an expense of time and labour, which would be absolutely criminal were it not caused by ignorance and prejudice, and not by design.

We have already shown that nations, which have but scanty populations, are, by that circumstance, prevented from making any considerable figure as manufacturers. When their tools are defective, they do indeed produce some good work, and if their tools were more perfect than they are, there is no just ground for doubting that their workmanship would be so likewise. But even with perfect tools, it could not be expected that many of a nation thinly scattered over a great extent of ground, could devote themselves to the arts. Their industry and their energies are commanded in too many other ways, to admit of many doing so. In densely peopled nations, the very contrary is of course the case; there a great majority of the population can be more profitably employed in the mechanical arts, than in agriculture.

To enrich my mind and purify my heart, to keep my tongue still and my arm active, to eat slowly and sleep quickly; this is all my philosophy.

Idleness is the sepulchre of a living man.

Alexander the Great valued learning so highly, that he used to say, "that he was more indebted to Aristotle for giving him knowledge, than to his father Philip for life."

Attention to little things is the economy of virtue.

He who can refuse himself need not ask favours of others.

The transmutation of metals is a small affair compared with changing shame to glory, reverses to success, sorrows to pleasures yet true wisdom can do all this.

A wife, who loses her patience, must not expect to keep her husband's heart.

He who enlarges his heart, restricts his tongue.

We judge of a horse on the road, of its rider at the inn.

Let every one sweep before his own door and the streets will be clean.

To believe in one's dreams is to be always asleep.

As we must render an account of every idle word, so must we likewise of our idle silence.

OF THE DISCOVERY OF AMERICA BY COLUMBUS

It is to the discoveries of the Portuguese, on the coast of Africa, in the OLD WORLD, that we are indebted for the discovery of the NEW WORLD; which may be considered one of the most important events that ever happened on our globe. Had an ancient Greek discovered America, how many altars would have been erected to him! yet Bartholomew and Christopher Columbus were not thus rewarded. Struck with the successful expeditions of the Portuguese, a bare inspection of the map of the old world convinced Columbus that another might be found by sailing perpetually west.

His native country, Genoa, treated his scheme as visionary, and thus lost an unequalled opportunity of aggrandizing herself. Henry VII., king of England, would not listen to the proposals made by the brother of Columbus, and he himself was repulsed by John II. of Portugal, whose attention was wholly employed upon the coast of Africa. The French marine was in a state of utter neglect, and the national affairs exceedingly deranged during the minority of Charles VIII.; and the emperor Maximilian was destitute alike of means and spirit for so noble an enterprise; and Columbus at length fixed all his hopes upon the court of Spain.

The marriage of Ferdinand, king of Arragon, and Isabella, queen of Castile, had united all Spain under one government, save the kingdom of Grenada, which was still possessed by the Moors, but which Ferdinand soon after took from them. The union of these two princes paved the way for the greatness of Spain, which was afterwards so materially advanced by Columbus, who, however, was obliged to spend eight years in application to Isabella's court, ere he could prevail upon it to accept of the benefits he proffered to it. The Spanish court was poor, and Columbus was only enabled to proceed on his first expedition by the Prior Perez, and the merchants named Pinzons, advancing 17,000 ducats towards fitting out the armament. The difficulty being at length surmounted, and a patent being granted by the court, Columbus sailed from the port of Palos, in Andalusia, August 23, A. D. 1492.

In a month after his departure from the Canary Islands, where he had anchored for refreshment, Columbus discovered the first island in America, having, during this short run, suffered even more from the murmurings and discontent of his men than he had done from the harassing delays he had endured at the various courts to which he had applied. This island, which lies about three thousand miles from the Canaries, he named St. Salvador; and shortly afterwards he discovered the Lucayan Islands, and those of Cuba and Hispaniola, now called St. Domingo.

At the end of nine months, to the great surprise of Ferdinand and Isabella, Columbus returned with some of the American natives of Hispaniola, several rarities from that country, and a quantity of gold, which he presented to their majesties.

The king and queen lavished their praises upon him, and created him high admiral and viceroy of the New World; and the whole court vied one with another in assisting him, and immense numbers volunteered to accompany him.

He again set sail, with a fleet of seventeen ships, and discovered several other islands, particularly the Caribbees and Jamaica. His first voyage had changed doubt into admiration; this second turned admiration into envy.

Though he was admiral and viceroy, judges had been sent out on board to watch his conduct; and when on his return the people ran in shoals to meet him as the guardian genius of Spain, he was brought from the ship chained hands and feet!

He had been thus treated by order of Fonseca, Bishop of Burgos, the *intendant* of the expedition. Isabella was ashamed of the ill requital Columbus had received, and did all she could to amend his injuries. But from fear that he would seize upon his discoveries for himself, or from some other cause, he was not suffered to depart again for four years. At length he was again despatched to the New World, and discovered the continent at six degrees from the equator, and saw that part of the coast upon which Cartagena has since been built.

Americus Vespucci, whom we call **Americus Vesputius**, a Florentine, had the honour to give his name to the newly discovered hemisphere, in which he had not an acre of land, and affected to be the first who discovered the continent. If even he had been the first *theoretical* discoverer, still the glory was due to him who had the judgment and courage to perform the first voyage. Columbus made three voyages to the New World, as admiral, before Americus Vesputius made one, as a geographer, under the command of Admiral Ojeda. But Americus Vesputius, writing to his friends at Florence that he had discovered a new world, they believed him. But how, in the name of reason, could he be said to deserve the honours of a discoverer, for chancing to be on board a fleet which, in 1497, sailed along the coast of Brazil, when Columbus had, five years before, pointed out the route to all the world?

The inhabitants of the newly discovered islands and continent were a new race of men; and America was also remarkable for animals and plants which are not to be found elsewhere, and which are so serviceable to us. Horses, corn, and iron, they have abundantly in common with other parts of the world; and among the other commodities which are peculiar to them, they have cochineal, the use of which has superseded scarlet, which was the only thing known to us for giving a fine red colour.

Besides cochineal, America has yielded us indigo and quinquina or jesuit's bark. This new continent likewise furnished pearls, coloured stones, and diamonds. America at present furnishes the meanest citizen of Europe many essentials of his convenience or pleasure.

The great Columbus, after having built several houses in the islands which he had discovered, returned to Spain, where he enjoyed a reputation undimmed by cruelty or avarice, and expired at Valladolid in 1506. The governors of Cuba and Hispaniola, who succeeded Columbus, committed the most execrable barbarities, in order to obtain an increased revenue: but Columbus is not to be blamed because others made an ill use of the knowledge they derived from him; and we may very safely conclude this brief sketch by saying, that **COLUMBUS** was one of the most illustrious of men, and his discoveries among the most important of human events.

It is by what men say we must judge of their silence.
There is a good which is without alloy, but there is no evil mixed with good.

He who is what he appears, will do what he has promised.
He who is always finding fault with himself, will find little comfort with others.

Dignity does not consist in possessing honours, but in deserving them.

BREAD.

BREAD is the most universally used of all the articles of human consumption.

We can scarcely name any other article of food with which we do not become cloyed by a constant use of it during even a short period. Such is not the case with bread. It is eaten with equal relish by the young child and by the aged man. The peasant makes it a portion of his frugal meal, nor can the rich man spare it from his banquet of many dainties. The peasant, hard and wearing as is his labour, could not merely exist, but even maintain his strength without any other food than bread. But the pampered epicure could not for any considerable period dispense with it. Without it, he would in vain cause earth, air, and sea, to be ransacked for delicate and delicious viands. It would be in vain that his skilful and obsequious cooks would exert their utmost art to minister to the pleasures of his palate. Amid all his delicacies he would envy the peasant his coarse loaf.

Nor would this be merely the effect of palate. It would spring from strong natural instinct. All animal food has a tendency to grow putrid. Its doing so in the human body would be productive of unwholesome humours, indisposing and agonizing the whole frame, did not bread, by the acidity it acquires in process of digestion, correct the humours and avert the evil. Thus, but for the use of bread, all the wealth of the voluntary would be insufficient to save him from painful disease and premature death.

So necessary as it thus clearly appears that bread is, how can we be sufficiently thankful that it is so universally distributed. Wheat will ripen, with proper care, in almost every latitude of the earth. Even in those countries which are destitute of wheat, or unfitted for its successful and abundant cultivation, there is almost universally some fruit or root which possesses its chief and most important qualities. A knowledge of these facts, and a due reflection upon them, ought to inspire us with a very peculiar value for so indispensable an article, and with the most profound gratitude to him who gives it and all other good things to us.

We should be ever careful not to waste even a fragment of that which is of such importance to our health and comfort; and we should not only be grateful that we possess it, but we should also be always ready to testify our gratitude: the young should be obedient and affectionate to their parents or protectors, and should remember that their affection and diligence provides their daily sustenance; those who are more advanced in years should be respectful and thankful to those who enable them to earn bread for themselves and their families; and all, both young and old, should show their gratitude to the divine bestower of their daily bread by cheerfully, and without pride or rudeness, administering a portion of their superfluities to those of their fellow-creatures, to whom the gifts of this world are less abundantly dispensed.

We pray that our daily bread may be given unto us: in like manner we should remember that, as our daily bread is given to us, so also should we, according to the means we possess, give unto others their daily bread.

BEER.

BEER is a strengthening fermented drink, chiefly used in England and Germany. In moderate quantities, and when unadulterated, it is, probably, the most wholesome of all artificial beverages; but if drunk to excess, it is highly intoxicating, and brings on many painful diseases.

Genuine beer is composed of only three ingredients,

malt, hops, and boiling water. Malt, the chief ingredient, is made from barley. The barley is steeped for two or three days in water. After it has imbibed a sufficient quantity of moisture, the barley is taken from the water and drained, and then laid upon the floor of the malt-house. The moisture it contains then causes it to swell and ferment. The fermentation is allowed to go on until the barley begins to put forth sprouts, just as it would when beginning to germinate, if sown in the earth. When the maltster perceives the appearance of the sprouts, he removes the barley from the malt-house floor, and puts it into a kiln. A gentle but regular heat is now applied; and the barley, being thoroughly dried, is then called malt.

To make beer, malt is first ground and then steeped in boiling water in a tub, called a mashing-tub. It is then boiled with some hops, and after being cooled in shallow tubs, put into casks. The casks are filled quite full, but the bung-holes are left open. Fermentation soon commences, and the liquid which flows out of the bung-hole is called yeast, which is preserved for the use of the bakers. In great breweries, the beer when made is put into a very large tub called a vat.

Hops are the blossoms of a climbing-plant, the vine of which is so weak, that poles are obliged to be put to support them. Hops give a bitter flavour to beer, and enable it to be kept. The best hops are grown in Kent.

PIMENTO.

PIMENTO, or allspice, which is so much in request for various kinds of pickles and condiments, is procured from the island of Jamaica. The shrub which produces it does not rise high above the ground, but spreads very widely, and is exceedingly luxuriant. Owing to its very great plentifulness, this spice is nearly, if not quite, the cheapest and the least regarded of all those which we obtain exclusively from foreign countries.

It is ever thus with mankind. That which is very scarce, and which can only be procured by the extreme toil and hazard of our fellow-creatures, we eagerly crave and inordinately prize; while that which is more easily procurable is held in proportionally small esteem.

GINGER.

This well-known article is of very great use as an ingredient in several medicinal preparations; and it is also in very great request as a culinary spice. In many parts of the East the plant of which it is the root is said to grow spontaneously in great abundance; but in the East and West India islands it is raised only by careful cultivation.

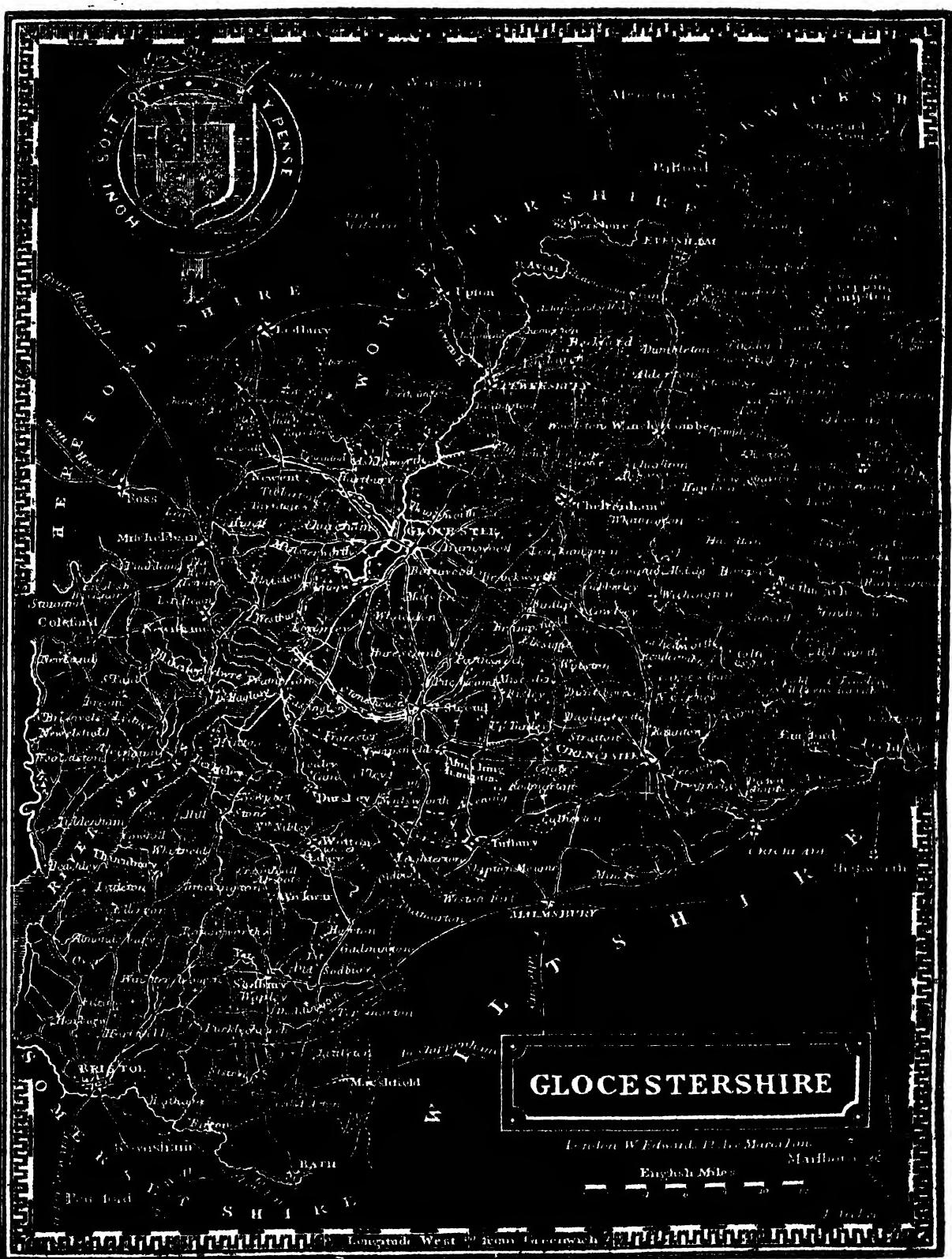
The root, that is, the ginger lies very near to the surface; when it is considered to be of sufficient age it is dug up, and submitted to a particular preparation according to the peculiar nature of the purpose for which it is intended.

If to be used as ginger, properly so called, the roots when dug up are scraped and thoroughly washed; they are then laid in the sun to dry; and when dried are in that condition in which we see them in this country.

But while speaking of ginger we must not forget to name that eastern preserve which is so much admired in this country. When the ginger is intended to be preserved it is dug up much earlier, and, consequently, while the root is much more tender than when it is to be differently used.

No. XXXVIII. GUIDE TO KNOWLEDGE.

PRICE
ONE PENNY



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English Miles

French Miles

GLOUCESTERSHIRE

This county, in the time of the Britons, was distinguished by the appellation of *Dorf*, from which the Romans borrowed the term *Douuni*, a name they gave to the inhabitants both of this and the neighbouring county of Oxfordshire. Its present name is derived from the city of *Gloucester*, which the ancient Britons called *Caer-glow*, the Fair City.

It is bounded on the north by Worcestershire, on the west by Herefordshire and Monmouthshire, on the south by Wiltshire and Somersetshire, at the south-west by Warwickshire, Wiltshire, and Oxfordshire.

It is about 68 miles in length, 30 in breadth, and 156 in circumference. Through a great portion of its length it is divided into two unequal parts by the river *Severn*. Its other chief rivers are the *Wye* and the two *Arons*. The city of *Gloucester* is 102 miles north-west of London. From the several rivers above named, together with some others of less note, this county is rendered one of the richest, most fertile, and delightful parts of England.

This county is naturally divided into three distinct parts or tracts—the *eastern*, the *middle*, and the *western*, which have received the several names of *The Vale*, *Cotswold*, and the *Forest of Dean*. The *Vale of Gloucester* manifestly derives its name from its situation; and the *forest* was probably called the "*Forest of Dean*" from the principal town in the district. Some, however, have supposed the word *Dean* to be a corruption of *Arden*, a name used both by the ancient Gauls and Britons to signify a wood. The eastern part, which is the widest of the three, is called the *Cotswold*: the chief part of this tract is barren and morlike, but affords excellent pasture for sheep, famous for their superior fleece, which has rendered this a celebrated clothing country. Originally, the sheep of this county were very small, but of late the breed, however, has been greatly improved by the introduction among it of sheep from other counties. The middle tract, called "the *Vale*", is well watered by the *Severn*, and from its joining the *Vale of Evesham*, it is sometimes known by that name. The western part of Gloucester is a perpetual alternation of hills and small vales, which formerly was every where clothed with timber, which furnished the principal supplies for our navy. Much of this timber is now cut down, but the tract, even yet, is more of a forest than an agricultural district.

The chief natural productions of this county are iron and coal, of which it furnishes large quantities. Its chief manufactured products are woollen goods of various kinds, and cheese, for which it is very eminent. It is likewise noted for perry and cider.

The capital of this county, *Gloucester*, is not very extensive, but is well built and prosperous. The other chief towns of this county are *Cheltenham*, *Tewkesbury*, *Stroud*, *Cirencester*, *Dursley*, *Berkeley*, *Wootton-under-Edge*, *Painswick*, *Lechlade*, and *Tetbury*.

Gloucester was long a Roman station, and always a place of considerable note. The Romans first placed a colony here for the purpose of curbing the incursions of the *Silures*, on the other side of the *Wye*. It was called by the Romans "*Colonia Glevum*," and was governed by a consul. The Saxons got possession of it about the year 570, soon after which it became part of the *Kingdom of Mercia*. In the Danish wars, it was rendered famous by the furious combat in this neighbourhood, between the Saxon king *ERUNDUM INGVISIDE*, and the Danish

general, *CANUTE*, when no less than *ENGLAND* was the prize for which they fought. *Cheltenham*, which, within the last twenty years has greatly increased in wealth and extent, owes its prosperity to its chalybeate springs, for which, as the resort of the fashionable and the wealthy, it is alone remarkable. *Tewkesbury*, situated at the confluence of the rivers *Avon* and *Severn*, was formerly noted for its manufacture of mustard; but in this respect it is now outrivalled by *Durham*. Near this place was fought, in the year 1471, the famous battle of *Tewkesbury*; at the close of which the spirited young prince *EDWARD*, son of the unfortunate *HENRY VI.* was barbarously murdered in the church of *St. Peter*. *Stroud* stands upon the banks of a little stream, who whose water is particularly qualified to receive a sea-tint dye, and imbue woollen cloth with it; hence this place and its neighbourhood are principally occupied by dyers and

Cirencester, though a very great thoroughfare, is, as to external commerce, but an insignificant place, though formerly it was one of the chief wool-markets in the kingdom. It derives its name from the river *Churn*, which passes by it, and the Saxon word *cester*, a *castle*. It was of great note among the ancient Britons, being the metropolis of the *Dobuni*; upon which account the Romans called it *Corinium Dobunorum*. It was then much more extensive than at present, which is plainly shown by the ruins, which are still seen in the adjacent fields and the chequered pavements, marbles, &c., every where about it. It was the scene of many remarkable events in the time of the Romans, the Britons, and the Saxons. The Saxons became masters of it in the year 577. After them it was possessed by the Mercians, then the Danes. It suffered greatly in our civil wars; and in these several conflicts the walls were razed to the ground; and of its several churches only one remained. It had formerly an abbey, the abbot of which was mitred. This town is considered the oldest in the county. *CANUTE*, the Danish king, held here a general council in 1020. *ALTER*, the first *Earl of Bathurst*, the friend of *Atterbury*, *Addison*, *Bolingbroke*, *Prior*, *Swift*, and *Pope*, and to whom the latter dedicated one of his epistles, died here in 1775. His magnificent seat, which adjoins this town, was visited, during the latter part of the first earl's life, by many of the brightest literary characters that have ever adorned our island. *Berkeley*, a small town on the *Severn*, is principally famous for its old Gothic castle, which was begun in the reign of *HENRY I.*, and finished in that of *STEPHEN*. The room where the ill-fated *EDWARD II.*, long harassed by a miserable confinement, was at length inhumanly murdered, is still to be seen. *Campden*, a small town, is noted for having been the place where the Saxon kings assembled in the year 687, for the purpose of consulting on the best mode of carrying on the war against the Britons.

BRISTOL, a city and county of itself, is partly in the county of *Gloucester*, and partly in *Somerset*. In population and trade, it is considered the second city in England, and is the great commercial capital of the west. It is 119 miles from *LONDON*. A further account of Bristol will be given in our description of *Somersetshire*. *Dursley*, a considerable town, is beautifully seated at the foot of a steep hill, covered with fine hanging wood, and is noted for its cloth trade. The country around Dursley is exceedingly picturesque. *Stroud*, or *Stroudwater*, so called from its situation on the river *Stroud*, is a place of considerable extent, and is noted for being the centre of the clothing district. At *Bisley*, a village near *Stroud*, was born and educated the famous *FRIAR BACON*, who,

from his superior learning, and in particular his mathematical knowledge, gained the reputation of conjuror. He died in the year 1284. *Wootton-under-Edge*, formerly called *Wootton-under-Ridge*, from its situation under a ridge of hills, is a very flourishing clothing-town, and has long been distinguished for the manufacture of fine cloths. Near this town is the village of *Alderley*, noted for being the birth-place of the celebrated Sir MATTHEW HALE, who lies buried in the church.

Among the other distinguished characters of this county, we must not forget to mention Sir William Winton, a vice-admiral in the reign of Queen Elizabeth, famous for his exploits against the Spaniards; Thomas Sternhold, one of the versifiers of the Psalms; John Oldham, the poet; and John Guillum, whose book of heraldry is much esteemed.

Population of the chief towns :

Gloucester	.	.	.	.	11,938
Cheltenham*	.	.	.	.	22,942
Tewkesbury	.	.	.	.	5,780
Stroud	.	.	.	.	8,607
Wootton-under-Edge	.	.	.	.	5,482
Dursley	.	.	.	.	3,226
Berkeley	.	.	.	.	3,899
Painswick	.	.	.	.	4,099
Newent	.	.	.	.	2,859
Tetbury	.	.	.	.	2,939

Gloucestershire sends 13 members to Parliament; viz., 4 for the county, 2 for Gloucester, 1 for Cheltenham, 2 for Stroud, 2 for Tewkesbury, and 2 for Cirencester. Cheltenham and Stroud are new boroughs.

COSMOLOGICA.

ANALYSIS OF THE HUMAN MIND

(Continued from p. 256.)

PREVIOUS to entering into this important subject it is requisite to observe that a distinction ought to be made between *mind* and *soul*, otherwise we shall fall into a dilemma, from which no power of reasoning can set us free. †

The *Mind* may be destroyed or become extinct, as frequent instances afford us lamentable proofs; but the *Soul* is and must be, from its origin and nature, indestructible and everlasting, inasmuch as it is part of that eternal spirit which generated all existence, and which suffers no change, either collectively or partially. What that ethereal essence or spirit is, presumption itself will surely never dare pretend to describe; but that it does attend upon, and influence the mind and motives of man, may be proved through the perceptions of the mind itself, and this proof will arise from the investigation of those attributes of which the human *mind* is possessed, and the influence exercised over them by some invisible power. Let no one startle at the expression when we say the *mind* is material, or in other words, that it is actually a part of the body, having its seat in the brain, and communicating

* Including the parish.

† In a valuable treatise, published under the superintendence of the Society for the Diffusion of Useful Knowledge, and under the head "Advantages and Pleasures of Science," this condition seems to occur in the following quotation:—"Whether the *Soul* be connected or not with any particular portion of the *Body*, so as to reside there, are points as yet wholly hid, &c. But this we know, that there is such a thing as the *mind*, independent of the body, &c." Thus making *Soul* and *Mind* only different terms for the thing, an error in phraseology at least, if not in conception.

sensation to every part of the human frame: intercept this communication, and the part excluded will cease to feel; without this tangibility from external causes, acting on the brain, no limb could have any more feeling than a stone or a stock. Again, the mind has a reciprocal effect on the body; for do not we see by the emaciation of the person what ravages inward grief can make upon the stamina of the constitution. Here then is the action and reaction of atoms, or substances on substances; and hence we may unassumingly enter into an examination of the faculties and powers of the *MIND*, without committing any offence against that doctrine which teaches the enlivening truths of a final resurrection.

We may enumerate the faculties of the mind under seven distinct terms, yet acting consecutively and in unison, viz.—*Thought, Affection, Will, Understanding, Memory, Reason, and Judgment*; each of these we must examine separately, and then collectively, as constituting in the aggregate the capabilities, powers, and operations of the human *mind*; still keeping in view the influence of a superior and governing power, which eludes our grasp, and which, while imparting genius and intelligence, is of a subtle purity, too refined for mortal scrutiny. First, then—

WHAT IS THOUGHT?

It is in the mind like a spring in the earth, that feeds the fountain of knowledge, and frequently rises as spontaneously; being equally inexplicable, and having its source too deep for our strength to dig: as the one is probably supplied by the sea, so the other may be imparted from the boundless ocean of divine intelligence. It may sometimes be compared to lightning flashing on the darkness of a midnight atmosphere, giving a momentary glimpse of the surrounding scene, and instantly vanishing away, leaving obscurity as dim as before. Such evanescent gleams of thought will at times beam on the mind, but quicker than the twinkling of an eye they fit and are gone! and the disappointed mind is again lost in its former tenebrosity of perception, nor can our utmost efforts recall the brilliant *conuscation*; for it has not suffered our memory to depict its image on the mental tablet, and therefore cannot be reviewed. Every person, doubtless, has experienced this visitation, who is capable of exercising any such operation as that of thought; in this we may apprehend a power that can and does direct the mind—that gives what it pleases to grant as a portion, but withdraws that which is too celestial for our gross material construction, allowing us only to glance for an instant at the incomprehensible light and life of the universe, the luminous cause of all things created and uncreated; but we have thoughts that do continue, and those thoughts act instinctively upon the next faculty of the *MIND*, that is to say—

THE AFFECTION.

This mental faculty is entirely of the sensual kind, and is actuated by outward impressions, as well as by the impulses of thought, and in this respect it may be fictitious, and frequently is remarkably capricious; it will often have attachments and aversions for which no rational cause can be assigned; but when moved by thought, without the intervention of external objects, it cannot be subject to doubt or vacillation; it must be decidedly good or bad, for only these two principles influence involuntary thoughts,

* Obscurity, darkness.

† A quick, sudden, and short duration of splendour; a flash, a glittering light.

and they can no more be amalgamated than day and night heaven and hell; neither can we command our thoughts, or think on what we like best; for if we could, wh would admit an evil idea to enter the mind, well knowing, that it will be the sure harbinger of pain and misery if it shall take full possession of the affections and mature into action; and if not, its intrusion is always the cause of perturbation and unquiet? But though we cannot control the creation of thoughts, God has given us other powers of mind, which enable us to choose one or the other when good and evil are set before us; it is therefore said in the Sacred Scripture, " Set your affections on things above;"* that is, make choice of the sublime, and that which exalts human nature, and reject the base and ignoble purposes of depraved thoughts: you cannot prevent them; they are as incident to the heart of man, through the imperfection of his nature, as diseases are to his body; but they may and should be expelled as diseases are, by medicine, or washed away, by inward purification, as is filth from the body, by outward ablutions. There is a Pool of *Bethesda* in every mind, and an angel to trouble the water. We may step in if we endeavour, and if our affection be directed to that end, it will tincture the next attribute; that is

THE WILL.

Having disposed our *Affection* according to the suggestions of some original cause, that *Affection* stirs up the *Will*, or inclination; for we are incited to do or to wish whatever predominates over our feelings; and, hence it occurs, that, acting by a sudden impulse, we so often do wrong, or mistake in our desires the worse for the better, the *Will* must be swayed by something else: it is but one of the limbs of the *MIND*, and without sight; it therefore wants the mental eye to guide its way, and also the other constituent parts, to regulate its operations. A good will, or a bad will arises from the way in which our affection has been formed; it is the offspring of feeling and sensation, but wild as the Arabian colt; it wants the rein and the bit; or, in its unrestrained gambols, it may, with the noblest sympathies, do the greatest mischiefs; but, guided and directed by a moderator, it is held in, and trained to the course of rectitude and usefulness, its immediate restraint being the contiguous faculty, which rises one step higher; namely,

THE UNDERSTANDING.

This is the product of experience, and teaches the science of discrimination; it shows us what is noxious ornoxious, worthy or unworthy; and when properly exercised, governs the *Will*; with a laudable precision, it is the monitor to which the *Will* should apply in every instance when prompted to action, and without which nothing should be undertaken; for how shall our *Will* be qualified to perform, unless *Understanding* direct the performance, or execute any operation, wisely and worthily, without knowing whether the result will be judicious and just, or rash and inconsistent; now, to qualify for this high office, the *Understanding* must apply to the still ascending influence, which we call

MEMORY.

Every attribute of the human mind is subject to outward, as well as inward impressions, and they are all, ex-

* If all the books on philosophy and reason, except the Bible, were destroyed, from this alone the whole body of those sciences could be restored. What a strong evidence this affords of Divine inspiration, and of a communicating medium between human and the all-wise Creator!

cept *Thought*, the entire passive recipients* of effects upon the physical constitution. *Thought* alone holds a double station, and is allied to divine inspiration, as well as to animal sensibility. The *MEMORY* is a sort of registry, in which experience and observation record the events and circumstances that have from time to time been exhibited to the human understanding; and it is of vast importance that this registry be kept orderly and systematically, otherwise its advantages will be lost, and, instead of a clear and regular reference, it will become a farrago of confusion; but if well arranged and properly disposed, it will be found to be the true, and indeed the only source from whence we can derive the materials that are fitted to form the habiliments of

REASON.

Ratiocination† is the finishing work of man's intellectual powers; if the operation begin from external motives, the auxiliaries will be summoned to aid in an inverse order, *Reason* will apply to the records of *Memory* for subjects of comparison, and for ideas to construct the thesis‡ which is intended to be erected, or to complete the conclusions that ought to be established according to correct and approved designs, and based on the immovable foundation of truth; *Memory* must have judiciously selected these materials from the *UNDERSTANDING*, and understanding could have had no power of production, except by its communication with the preceding faculties of the mind--without a store from whence to obtain the *prima facie* articles, no work can be executed to perfection; but *Reason*, invested with means, and provided with materials, builds her temple, not in the regions of fancy, but in the " KINGDOM OF KNOWLEDGE," and dedicates it to genuine

JUDGMENT.

This last and principal part of the *MIND*, and for which all its other faculties are required to be called into counsel is still the most imperfect and uncertain, no earth-born being ever had it in perfection: the reason is obvious, when we consider, that the members of this mental course are commonly at variance and never united; the *Will* is often refractory, and the *Affection* misplaced, the *Understanding* perverted, and the *Memory* inactive; so that *Reason* is perplexed, and affords but a dubious report of the facts and evidences by which our *Judgment* should be guided, and warned of the dangers of scepticism.§ How awful is the consideration, when we perceive how hastily and rashly we sometimes exercise this faculty upon the characters and disposition of others; but how astoundingly dreadful when it pronounces the fiat of life or death, and dooms to destruction, that which God alone can give! and, who being alone of unerring judgment, has alone the right to take away. A natural inference will arise from this division of the human mind; that as our thoughts are not always of the purest kind, and those that are so, being subject to contamination, even from the very first contact with our senses, we never can and never shall have an undoubted or clear knowledge of that which is perfect wisdom and righteousness, until our superior part, the attendant spirit, shall shake off its load of clay, and range unencumbered

* Receivers.

† The act of deducing consequences from premises by the exercise of reason.

‡ Thesis, a position, a subject to dispute upon; a proposition advanced to be decided by a logical argumentation.

§ A late Lord Chancellor apologized for his tardiness in giving final judgments, by saying that he had a doubting mind—Reason is slow to instruct, and long in deliberating, lest her adjutors should deceive, and her reports be erroneous.

through the regions of omniscient* light.—We may close this subject with the following

GENERAL OBSERVATIONS.

First, that as man, in his natural state, is a compound of the four known elements, *Earth, Water, Air, and Fire*, so also in his mental capacity he is endowed with the attributes previously mentioned. Secondly, that as an animal, he cannot exist without the union of those elements, & neither can his mind be entire without the possession of all and every one of the foregoing principles ; for try to leave out one of them, and a chasm immediately appears. Man cannot have form without substance, moisture nor adhesion without fluids ; he can have no life without a vital flame, nor any action of the lungs without a breathing air ; so without thought he would be an idiot, & without affection below the brutes, without a will a mere automaton, without understanding a senseless creature, without memory an empty vessel, without reason a brute, without judgment a novice and a continual babe.

Agreeably to the proposed design, our next inquiry relates to the properties of those elements of which the human body is composed and formed.

HISTORY AND CONQUESTS OF GENGHIS KHAN. (IN THE MIDDLE AGES.)

GENGHIS KHAN, whose first name was TEMUGEN, succeeded his father, about the end of the 12th century, in the sovereignty of some *Tartar hordes*, called MOGULS, who were situated on the north of China, hence he is called the *Emperor of the Moguls*.

At the time of his father's decease, his subjects amounted to between 30,000 and 40,000 families, but of these two-thirds quickly deserted, and TENGUEN was left almost without subjects.

He was the most bloody conqueror that ever existed in the world. He was born A. D. 1193. He is said to have murdered upwards of fourteen millions of the human race, under the pretence of extirpating superstition, and establishing the worship of ONE GOD.

His courage, talents and fortune, made him master in time, of the greatest monarchy that ever existed in the world : it comprehended more than 6000 miles from east to west, and 3000 from north to south.

Conquering the neighbouring hordes, the ambitious TEMUGEN took the title of GENGHIS KHAN, which signifies *King of Kings, or Great Khan*.

He published a civil and military code for the wandering tribes which he had subdued, and set out at their head, in order to make fresh conquests.

During this period, Genghis Khan was supposed to be tributary to the Emperor of Kitay (China), who, in 1210, sent him an officer, demanding the customary tribute.

This was refused with the utmost INDIGNATION, and a war commenced, which ended in the SUBJUGATION of the Empire of Kitay to the Moguls.

He soon made himself master of the immense country situated between the *Volga* and the *Pacific Ocean*.

After conquering China, he subdued the peninsula of CORSA. It was from this place that he set out for PERSIA, which was at an immense distance, to give battle to one of the then most powerful princes of Asia, viz., MOHAMMED, sultan of KARISM, master of Persia, Media, Armenia, and a great part of India.

The terrible battle which decided the fate of these celebrated rivals was fought on an immense plain, north of the river *Jaxartes*, near the town of OTRAR.

MOHAMMED had assembled 400,000 men, GENGHIS KHAN 700,000, commanded by his four sons, who, throughout their life, contended with each other to serve him faithfully.

GENGHIS was completely conqueror, and his victory extended his power to the *Euphrates*, and the heart of India.

After the conquest of KARISM, GENGHIS sent part of his army into *Iran or Persia*, where they also made large conquests, while another part of his army invaded GEORGIA, and the countries to the west, all this time committing such enormities, that the Chinese historians say that both men and spirits burnt with indignation.

On his return, he stopped at TONCAR, to hold a general assembly of all the KHANS, governors and generals of his empire. It was at this sort of diet that he received the ambassadors from the conquered countries, to the number of more than 500, and that one of his sons made him a present of 100,000 horses.

He was on his way to reduce the southern part of *China*, when he died in the year 1227, at the age of 70.

He divided his empire between his four sons, each of whom was one of the most powerful monarchs of the earth. They and their descendants greatly extended their conquests, until their power was eclipsed by another mighty conqueror, of whom we shall speak in a future chapter ; it is TAMERLANE THE GREAT, who appeared about 100 years after.

The KHANS of the CRIMEA, destroyed by CATHERINE the Second (of Russia), were descendants from GENGHIS KHAN, as were also the chiefs of the UZBEK TARTARS, who exist to this day.

REFLECTIONS ON THE ORIGIN, RISE, AND FALL OF STATES AND EMPIRES.

Or all the sciences, there is no one that enlightens the mind so much, or conduces more to the humbling of human pride, than a general knowledge of *ancient and modern history*.

In these annals of mankind, we see the manners of every age and nation, and the various characters of those who had the direction of all public affairs ; also the motives, causes, and consequences of all their actions.

We may also see the *rise and progress, the exaltation and decline*, of the most powerful states and empires ; and trace the causes of their dissolution from the first rudiments of decay to its final completion.

The prospect we thus explore is, indeed, very humiliating, as it presents little else than scenes of chicanery and violence, of horror and devastation. But a review of it may suggest to the attentive mind some instructive and profitable considerations.

It will teach us the instability of all human things, and tend to lessen our dependence upon them. It will show us what man is, when he revolts from that which alone is capable of governing him aright, and is left to the direction and impulse of his own passions.

We shall see that every thing beneath the sun is subject to change and decay ; and by observing what the causes were, that brought the great empires of Assyria, Persia, Greece, and Rome, to an end, we may learn to guard against them in the present times.

In kingdoms and empires there seems to be a gradual

* All-knowing, of infinite knowledge.

† Clever in his Offices says, it is the property of a fool to say that *parasram*—I did not think.

progress to *maturity*, and also to degeneracy and decay, not unlike that seen in the human body.

From a state of infantine weakness, both gradually increase in strength, vigour, and stability, till arrived at the summit of their destined perfection and glory.

From this point they progressively decline to a state of obvious weakness and decrepitude, the certain prelude of approaching dissolution.

The fame of the FIRST ASSYRIAN MONARCHY is very ancient, it having been founded more than 2000 years before the commencement of the CHRISTIAN ERA.

This empire was doubtless very great, and of long duration, yet time, and the imperfection of all human things, brought it to an end.

The glory and splendour which it exhibited through a long succession of ages, were all effaced, and its power weakened by the depravity of the people, and at length totally lost, through their cowardice and treachery, when conquered by the eliminate *Sardanapalus*.

From causes nearly similar, fell the great succeeding EMPIRE of the MEDES and PERSIANS, which gave an opportunity to ALEXANDER THE GREAT, or, as some called him, "the Macedonian Madman," to establish his throne upon its ruins.

THE GREEK STATES, while united and governed by the ancient laws of the *Republic*, were the admiration and terror of the *East*. But their wisdom is departed; they have long since ceased to terrify, and the glory of ATHENS is laid in the dust!

TYRE, once the "*metropolis of nations*," is no more crowded with ships. Her merchants are no longer princes, nor numbered among the "*honourable of the earth*."

The evangelical prophecy is accomplished; and where proud navies, freighted with the richest treasures of the *East* once rode, the fisherman now spreads his nets in solitude and silence.

THEBES, PALMYRA, PERSEPOLIS, and BALBECK, have long been the seats of desolation, and only present the pensive traveller, who explores the remaining vestiges of their ancient magnificence, with the striking proof of the instability of human things.

Nor has the once MIGHTY ROMAN EMPIRE, or its PROUD CAPITOL, found an exemption from the general fate.

The Empire of Rome was founded on a basis deemed impregnable to all human attacks, and guarded by laws well calculated to secure its stability and duration.

It was long protected and governed by *councils*, *tribunes*, and *dictators*, eminent for wisdom, probity, and valour.

It grew great by the accession of many provinces and kingdoms. Its splendour was increased by the pomp and riches of innumerable triumphs.

By successive victories it became so powerful, that for many ages it could not be shaken. But at length the prevalence and effects of luxury sapped its foundations.

Through the gradual decay of its military discipline and public virtue, and the influence of ambition and internal discord, its native strength was lost, and its forces were turned upon itself, to the annihilation of its ancient *liberties, happiness, and greatness*.

And although, after these became extinct, the little public virtue which remained in the breasts of individuals was sometimes exerted for their restoration, every attempt was made in vain; and the power of Rome, by degrees, still declined, like an aged body deprived of its vital nourishment, and was soon totally subverted.

From these causes, and by these gradations, ROME, and became an easy conquest, to those barbarous nations over whom her eagles had formerly triumphed.

Ignorance and superstition usurped the ancient seats of learning, science, eloquence, and the fine arts, which had now fled for ever.

Her temples were sacked, and her towering structures, which had been objects of universal admiration, were demolished, or remained only the defaced and melancholy vestiges of her former glory.

From the instability and imperfection of all sublunary things, a similar fate will probably attend the present, and all succeeding states and nations.

On the best constructed, and most admired fabrics of human wisdom and human pride, *mutability and decay* is the universal inscription.

A certain portion of greatness, dominion, and glory, is permitted to exist in the world, but this is ever subject to mutation.

It verges, like the light of the sun, from one part of the globe to the other. Succeeding empires are raised on the ruins of those which have fallen.

Thus, like the *phœnix* in the fable, when one is destroyed, another springs from its ashes.

These reflections, on the rise and fall of ancient states naturally lead to a consideration of that whereof we are members, and also to a consideration of ourselves.

As individuals of a like community, which must sooner or later experience a like change, every one is interested in the inquiry.

What tends most to increase or destroy the happiness of a kingdom, empire, or state? To weaken or give it stability? To destroy or prolong its duration? The same questions are in a great measure applicable to families and individuals.

The British empire is said to have been founded by *Wisdom*, on the rock of liberty. Its constitution is, perhaps equal, if not superior, to any that has yet been formed; but unquestionably it is yet far, very far, from being perfect.

From the history of past ages, it appears that *LUXURY* has always been the original and grand cause of that disorder and ruin in which the greatest *states* and *empires* have been involved, and by which they have fallen.

The same cause may be applied to the fall of families and individuals. *Luxury*, and its constant attendants, imbecility of mind and body, are the canker-worms of every political state, whether public or private.

Luxury naturally makes a rapid progress among all ranks of the people. Nothing is so inimical to the happiness and welfare of individuals, families, and nations, as the giving way too much to *luxury*.

The superior classes, who ought to be patterns of temperance and virtue, are too apt to set examples of prodigality and dissipation.

In these vices, the inferior classes of the people have followed their superiors so closely, that, as SHAKSPEARE shrewdly remarks,

The toe of the peasant comes so near the heel of the courtier, that it galls his kine.

This is the case not only in luxury and extravagance, but most other vices, wherein they seem to pride themselves in being as great proficients as their superiors.

Hence it highly behoves every man to consider his own case, and endeavour, as an individual, essentially necessary to bring about a general reformation, on which public

as well as private security and happiness solely depend; and consequently, that he should be *first* solicitous to reform his own conduct, and *secondly*, be jealous of those rights and liberties which are his dearest prerogatives; and support them with a decent but manly fortitude, unawed by the frown of tyranny, and uncorrupted by the snuff of bribery.

Were this the case, all measures of public conduct, which have private interest or ambition for their object, would be checked in the origin of their existence.

If these remarks were duly and properly attended to, that destruction which frequently seems suspended over us, would be averted, and peace and happiness would diffuse their blessings all around:



HUNTING THE GAZELLE.

THE Gazelle or Antelope forms a connecting species between the goat and the deer kinds; somewhat resembling the former internally, and the latter externally, excepting its horns, which are annulated or ringed round, with longitudinal depressions running from the bottom to the point.*

Of all the animals in the world the Gazelle is said to have the most beautiful eye, extremely brilliant, and yet so meek that all the eastern poets compare the eyes of their mistresses to those of this animal. The disciple mentioned in Acts ix. 36, 40, who was raised to life at Joppa, was called Tabitha, which by interpretation signifies Dórcas or the Gazelle, from the beauty of her eyes; and this is still a common comparison in the east, “*Aine el Cæzel*,” or “You have the eyes of the Gazelle,” is the greatest compliment that can be paid to a fine woman. The Gazelle is most beautifully formed, and bounds with surprising agility; they are so fleet that greyhounds, though reckoned excellent, cannot come up to them without the aid of the falcon. The usual method of taking the Gazelle is by hunting it with the falcon or the sanguine, a species of leopard, which takes its prey, not by its fleetness, but by the greatness of its springs, but

should he fail in his first essay the game escapes; but it is sometimes taken by the following expedient:—a tame Gazelle, brought up for that purpose, is taught to join those of its kind whenever it perceives them. When the hunter, therefore, discovers a herd of these animals together, he fixes a noose round the horns of the tame one, in such a manner that if the rest butt it they are entangled; and thus prepared he sends his Gazelle among the rest.

The tame one no sooner approaches, but the males of the herd instantly sally forth to oppose him, and in butting with their horns are caught in the noose. Finding himself taken in the snare, terror lends him additional strength and activity, and he makes the most vigorous exertions to disentangle himself; and escape before the hunter can come up with him. Its effort under these circumstances is proposed for imitation to the person who has rashly become surety for his neighbour.

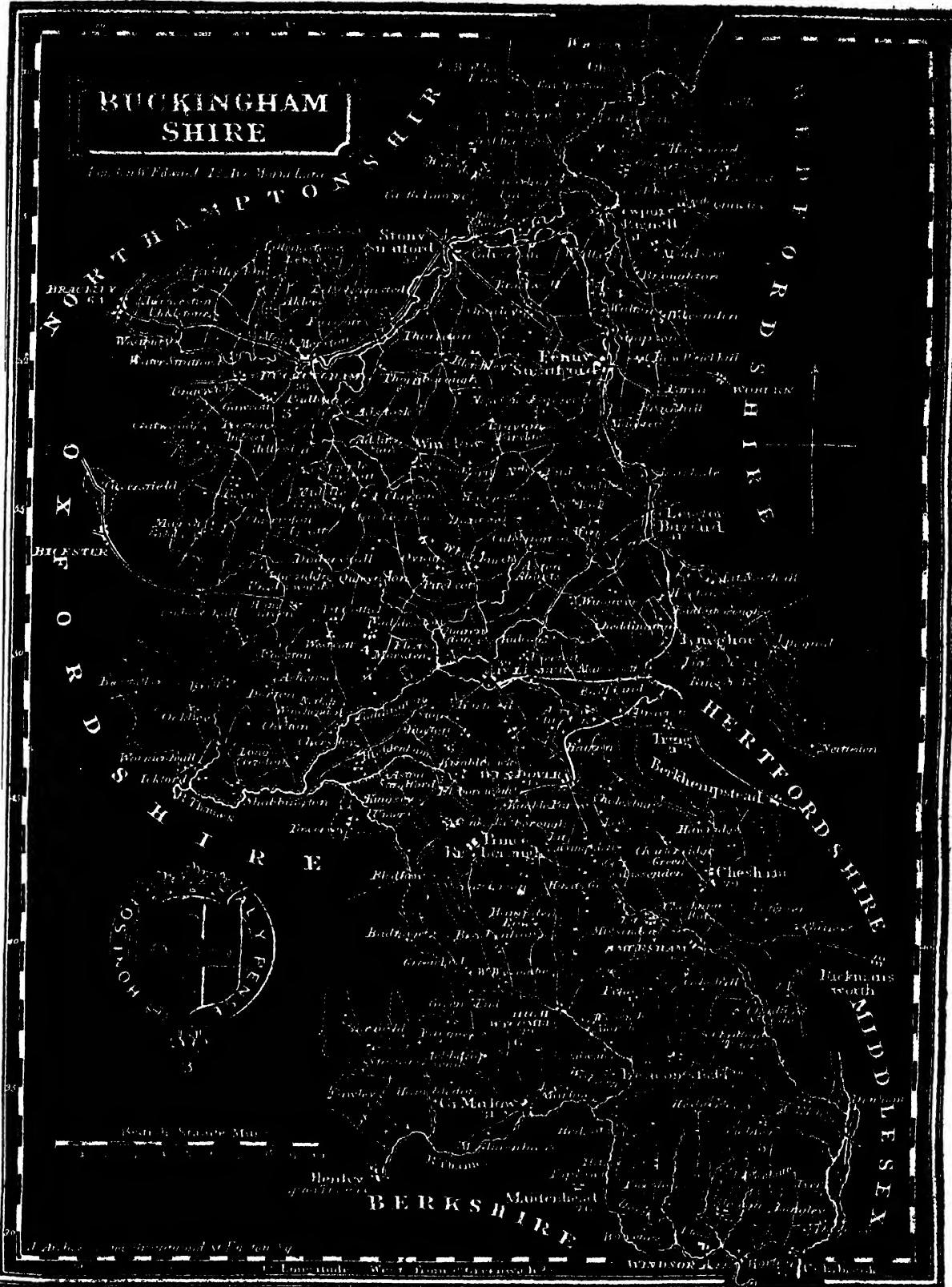
“Deliver thyself as an Antelope or Gazelle from the hand of the hunter, and as a bird from the snare of the fowler”—(Proverbs vi. 5.)—that is; “Thou hast imprudently placed thyself in perilous circumstances; suffer no delay in making an effort for thy release.”

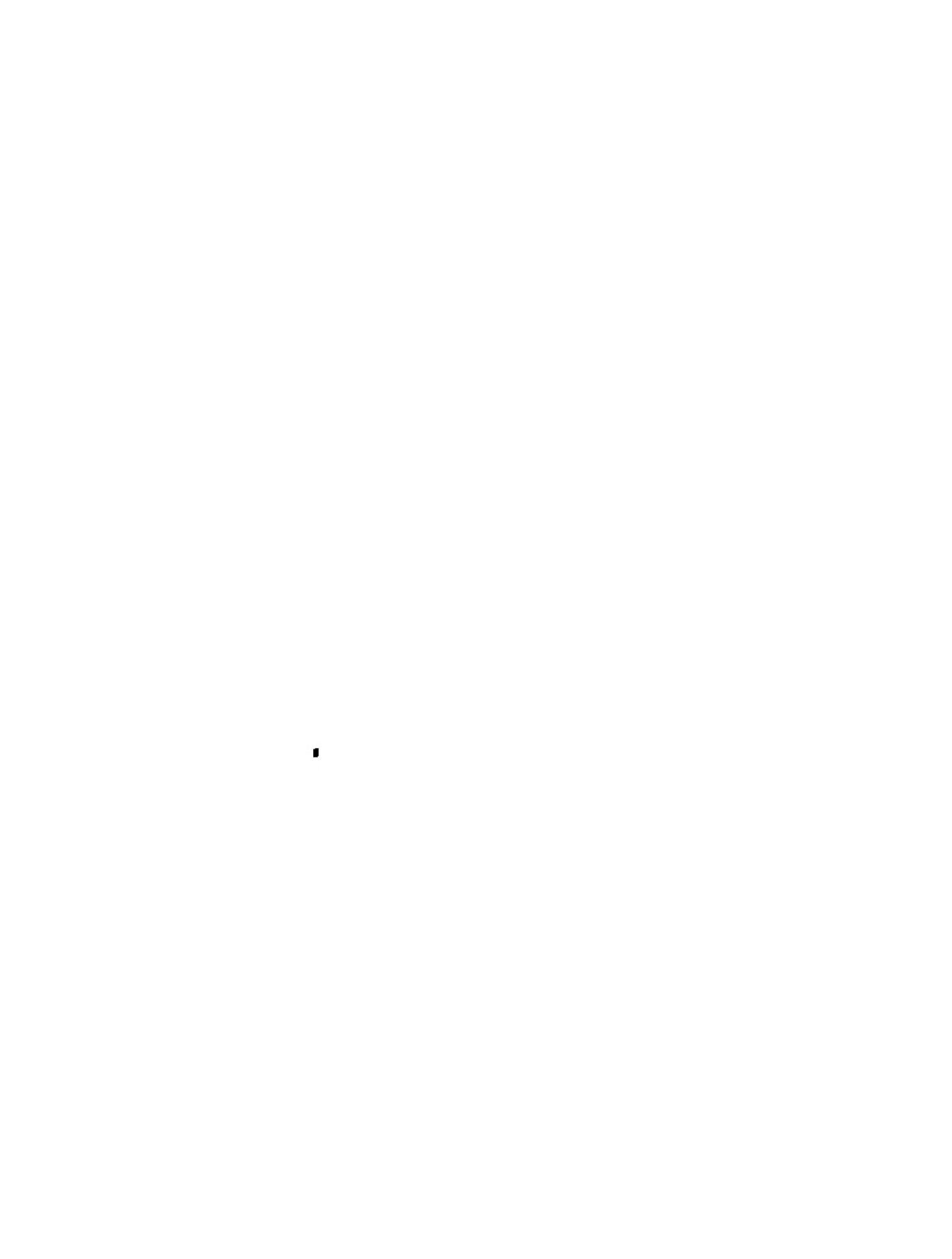
* The Gazelle agrees with the goat in the texture of the horns, (which have a core in them, and they never cast them,) and with the deer in the elegance of their form and swiftness.

CONTINUOUS

BUCKINGHAM SHIRE

Top, 6th Edition, The Monarchs





BUCKINGHAMSHIRE.

THIS county is one of the three that was formerly possessed by the *CATIVELANI*. It is supposed to have derived its name from the Saxon word *buck*, expressive of great abundance of deer, for which this county was formerly celebrated.

Buckinghamshire is bounded on the north by the Thames, which divides it from Berks; on the east by the counties of Middlesex, Bedfordshire, and Herts; by Northamptonshire on the north; and by Oxfordshire on the west. It is about 48 miles in length, 18 in breadth, and 138 in circumference. It contains 8 hundreds, 14 market towns, 185 parishes, and 615 villages. It lies in the province of Canterbury, and the diocese of Lincoln.

Its rivers are, the *Thames*, *Ouse*, and *Coln*; the two latter are inconsiderable. The *Thames* waters its southern part, the *Coln* its eastern, and the *Ouse* the northern.

The face of this county is greatly diversified. The south-east part lies high, and consists of a ridge of hills called the Chiltern, probably from *Chilt*, a Saxon name for Chalk. The northern part is distinguished by the name of *The Vale*, which is considered one of the most fertile in the kingdom.

The stewardship of the CHILTERN HUNDREDS, so frequently mentioned in the public prints, is unproductive either of profit or honour. It is merely a nominal office under the form, granted at the request of a British senator, to enable him to vacate his seat in Parliament. This county abounds in wood. Its chief products are corn and butter, but it is most noted for cattle, the business of grazing being most profitably pursued. Its principal manufactures are lace and paper.

Its towns are, *Buckingham*, *Aylesbury*, *Great Marlow*, *Amersham*, *Stoney Stratford*, *Wycombe*, *Newport Pagnell*, *Colnbrook*, *Beaconsfield*, *Olney*, *Wendover*, *Chesham*, *Ivinghoe*, *Risborough*, and *Winslow*.

BUCKINGHAM, the county town, is situated on the *Ouse*. It is of considerable antiquity, but is a small place, containing only 3000 inhabitants. The most conspicuous and principal ornament of the town is the church, which stands on the summit of an artificial mount, which was originally occupied by a castle; but the great object of interest and attraction is in the neighbourhood; namely, *STOWE*, the splendid and princely seat of the DUKE of BUCKINGHAM. It is about two miles north-west of Buckingham. The *gardens of Stowe* are considered the most elegant in the kingdom. The most celebrated and populous town in the county is *AYLESBURY*. Here is held the Lent Assizes and the Quarter Sessions. In the time of the usurping Norman, it was a royal manor, granted on the singular condition, that they should find straw for the king's household, and sweet herbs for his chamber, provide him twice in the winter three eels, and thrice in the summer three green geese, if he should come there so often. Situated in the rich tract named after it, this town has almost an incredible amount of business. One branch of the business of Aylesbury is that of rearing early ducklings for the London market; and to such an extent is this apparently unprofitable trade carried on, that in one single season of six weeks the sum of three thousand pounds is commonly received by those who are engaged in it.

ETON, a large village of this county, situated on the *Thames*, communicating by a bridge with Windsor, is the seat of a college or public school, where youth of the higher order are prepared for the Universities. Formerly Eton had a very mean appearance, but of late years it has been considerably improved, many of the houses having been rebuilt,

and others repaired in the modern style. Eton college was founded in the year 1440, by HENRY VI. A singular custom is triennially observed here, called the *MONTEM*, from the *Mount* in the village of *Salt-hill*, about a mile and a half from Eton, to which the whole school march in military procession, with colours and music, on *Whit-Tuesday*; on which occasion a collection is made for the Captain of the boys on the royal foundation, to which every person present is expected to contribute. The amount of the sums usually collected is from 600*l.* to 800*l.* This sum is given to the Captain, or Senior of the boys, previously to his removal to Cambridge. The origin of this singular custom is lost in obscurity, but it may be traced as far back as the reign of Queen Elizabeth, who, when on a visit to the college, desired to see an account of the ancient ceremonies observed there from the period of its foundation. In the list was this procession of the scholars. *MORELL*, the author of the *Thesaurus*, was born at Eton in 1703.

AMERSHAM, an ancient borough, is seated on the Chiltern. The woods on the neighbouring hills render its prospects very delightful. Amersham is distant 3 miles from Chesham, 5 from Beaconsfield, and 7 from Wycombe. Chesham is situated in a pleasant and fertile valley, on the border of Hertfordshire, and is chiefly supported by its trade in lace and shoes.

BEACONSFIELD, a small town, is supposed to have received its name from the term *Beacon*, either indicative of the commanding edifice on which it stands, or of the purpose to which that eminence was formerly appropriated. Among the monuments in the church of this place, is a plain mural tablet of marble, erected to the memory of that surprising genius, EDMUND BURKE; and in the church-yard is a tomb of the poet WALLER. **COLNBROOK**, 18 miles from London, stands on four channels of the river *Coln*, over each of which it has a bridge. It is seated on the great road from London to Bath, and is chiefly supported by its inns. This town is of considerable antiquity. Part of it is in Middlesex. **IVINGHOE**, a small town, 33 miles from London, stands in a nook between Bedfordshire and Hertfordshire, and is surrounded with woods. **GREAT MARLOW** is a small town beautifully situated near the banks of the *Thames*, under the Chiltern hills. This place was formerly called Chipping Marlow. The manor of Marlow more anciently belonged to the Earls of Mercia, and was given by William the Conqueror to his queen Matilda. Its chief manufactures are paper and lace. The neighbourhood of Marlow is beautifully wooded and highly picturesque. Near Marlow are the Temple Mills, where there is a large manufacture of copper and brass. The second department of the Royal Military College continued here for many years until the College was removed to Sandhurst, in Berks, in 1813. Little Marlow, a village about a mile and a half from Great Marlow, was formerly a part of the possessions of *EDITH*, the queen of Edward the Confessor. Great Marlow is 31 miles from London. This town received its name from the marly soil on which it stands. **WYCOMBE**, sometimes called *High Wycombe*, derives its name from the river *Wick*, which passes through it, and *Comb*, a valley. On each side of Wycombe are some pleasant hills, beautifully shaded with woods. In 1724, a Roman tessellated pavement, about 9 feet square, was discovered in a meadow of the Earl of Shelburne, now Marquis of Lansdowne, together with some Roman coins. In the church of this place Henry Fitz-Maurice Petty was buried in 1805. It is 29 miles from London, 6 from Beaconsfield, and 14 from Uxbridge. It is noted for manufactures of paper and lace. **OLNEY**, on the *Ouse*, is remarkable only for its church, which has a

very fine spire. About a mile from this town, at *Western Underwood*, was the residence of the eminent poet Cowper. Olney is 56 miles from London, and 12 from Northampton. *Stoney Stratford*, *Risborough*, *Wendover*, and *Winslow*, are all small towns, and of little note. Stoney Stratford is seated on the Ouse, and on the Roman way called *Watling-street*. *Risborough* is remarkable only for some antiquities. Wendover is situated on a lofty situation near the centre of the county. It was the birth-place of Sir Henry Colet, Lord Mayor of London, who was the father of Dean Colet, the founder of St. Paul's school. Near this town is the monument of *Whitecliff Cross*, which was erected to commemorate a victory obtained there over the *Danes*. Wendover is about 35 miles from London, and five miles from Aylesbury. *Winslow* is a small place of considerable antiquity. Near Winslow are the ruins of a castle, which was built by HUGH DE BOLBEC, heir to WALTER GIFFORD, the second Earl of Buckingham, about the middle of the 12th century. In the manor of Crendon, also near Winslow, was Nuttley Abbey, for regular canons of the order of ST. AUGUSTINE. It was built and endowed by Walter Gifford, the Earl of Buckingham, above mentioned. *Newport Pagnel* is situated near the river Ouse, on the great road from London to Northampton. It is supposed to have derived its name from the family of the *Pagnells*, who lived in the reign of WILLIAM RUFUS. Leland and Camden have both made mention of a castle that formerly stood at Newport Pagnel, but of which no vestiges are now discoverable, except the site, which is still called the castle; but there were no remains of this building even in the time of Camden. At *Crawley*, near Newport Pagnel, was a monastery before the time of EDWARD THE CONFESSOR, which is mentioned in the *Doomsday Book*, and continued till some time after the Conquest. This county gave birth to LADY TEMPLE, wife of SIR THOMAS TEMPLE, and grandmother to the late LORD COBHAM, whose gardens at *Stowe* are justly considered among the greatest curiosities in England. It is remarked of this lady, that though she had no more than four sons and five daughters, yet she lived to see them increased to no less than seven hundred persons. *Witchchurch*, a village about four miles from Aylesbury, is noted as the birth-place of Mr. BONNYCASTLE, many years professor of mathematics at Woolwich, where he died in 1821.

Among the artificial curiosities of Buckinghamshire, the grandest and most truly interesting is the immense reflecting TELESCOPE of DR. HERSCHELL; instead of looking at the object to be viewed, the observer is seated with his back towards it, and has it reflected in the speculum of the telescope. Herschell, whose astronomical researches and discoveries place him in the very highest rank of the scientific men of this country, resided many years at *Slough*, a small place in this county, near *Windsor*. Finding that the imperfection of the ordinary glasses was a grand obstacle to his progress in discovery, he had this telescope made under his direction and inspection. In length the tube is 39 feet 4 inches, and in diameter it is four feet ten inches; the whole is composed of sheet-iron joined without any seaming, as the iron funnels for stoves are. This iron is three inches and a half in thickness throughout, and weighs upwards of a ton! The concave face of this great mirror is four feet in diameter. The telescope thus described is suspended in very complex and strong machinery which acts upon rollers, these again rest upon two circular brick walls, and the whole apparatus receives a circular motion merely by the aid of a single workman; we scarcely know of any artificial curiosity which this country contains at all

comparable to this immense telescope; the discoveries which have been made by its means are both curious and numerous, and form some of the most important topics of modern astronomy. The ingenious and philosophical inventor of it has made many very important discoveries, among which is that of the planet, which, in compliment of his genius, is named after him.

Population of the Towns.

Buckingham, and parish.....	3,610
Aylesbury, and parish	4,907
Stoney Stratford	1,619
Great Marlow	4,237
High Wycombe	3,101
, parish.....	3,198
Chesham, and parish	5,388
Beaconsfield	1,763
Newport Pagnel, and parish	3,385
Ivinghoe, and parish	1,648
Wendover (<i>disfranchised</i>), and parish..	2,008
Olney, and parish	2,344
Risborough (Princes), and parish	2,122
Risborough (Monks), and parish.....	1,018

This county sends 11 members to Parliament; viz. 3 for the county, 2 for Buckingham, 2 for Wycombe, 2 for Aylesbury, and 2 for Marlow.

The disfranchised boroughs are *Amersham* and *Wendover*.

BIOGRAPHY OF DR. BIRKBECK.

WHEN an individual rises into estimation, and becomes conspicuous in the scientific world, every thing relating to him is rendered interesting; like a new star in the firmament, at which thousands gaze with astonishment, and the few learned behold with a scrutinizing curiosity and attention.

While the star yet shines, and before it disappears, its properties, peculiarities, and progress, may be investigated; it is not requisite that we should wait for its exit before we attempt a delineation of its course.

If to excite emulation, through admiration, be desirable, and biography be an exemplary mode of raising that noble sentiment in the mind, it is best effected by presenting the living emblems to the sight, while yet breathing the vital air, and still contributing to the stores of science.

Posthumous fame, it is true, does not excite envy,—that fever of the faculties cools, when the eye glances at the chilling symbols of mortality—where sculptured eulogiums alone adorn the admonitory stone; but with emulation a different feeling prevails, the feeling of regret, that the flame is put out at which many a taper might have been lighted.

The biographical memoir which we now present to our readers, is one among others calculated to gratify the laudable curiosity of those who admire genius, and who are anxious to trace its growth from the germ of reason to full and complete maturity, in order that they may ascertain its nature and nourish its increase. It is a living life still standing in the splendour of science, and may it long remain in the sunshine of prosperity!

Without wealth, patronage, or family connexions, Dr. BIRKBECK is an instance of what intrinsic talent, industry, and perseverance, may effect, when properly directed and steadily pursued. Previous to the invention of the *Art of Printing*, KNOWLEDGE was hidden in the arcanum of



mystery and darkness, but the PRESS has provided a KEY that unlocks the enchanted CHEST, and dissolves the spell that had long held mankind in durance.

By this powerful engine, the "Printing Press," Dr. BIRKBECK first brought himself into notice; by the influence of its effect, he broke through that obscurity which had held many a one in life-long seclusion, and which is so poetically lamented by the late Mr. GRAY—

" Full many a gem of purest ray serene
The dark unfathom'd caves of ocean bear;
Full many a flower is born to blush unseen,
And waste its sweetness on the desert air."

The PRESS transplants many a wild flower from the wilderness to the *Garden of Literature*, and gives many a gem to the splendour of science: the time is departed which the poet deplored—

" When KNOWLEDGE to their eyes her ample page
Rich with the spoils of time did ne'er unroll,
Chill penury repress'd their noble rage,
And froze the genial current of the soul."

KNOWLEDGE now spreads like the rays of the rising sun, and EDUCATION having given appetite to the mind, for its sustenance is as eagerly sought for as that which resuscitates the stomach; every breakfast-table is supplied with a morning paper; or, if the families cannot afford such a luxury, some cheap weekly publication contributes to the enjoyment of their taste, and supplies the draught that refreshes and satisfies the thirst of information.

Dr. BIRKBECK, who is the subject of this biographical article, was born at Settle, in Yorkshire, where his family resides, and in or near which he received the rudiments of his education. The family of the Birkbecks are of that denomination of sectarians commonly called QUAKERS, and have maintained, in all the relations of life, that honour and integrity, for which, in plain dealing, and simplicity of manners, the members of the Society of FRIENDS have always been distinguished.

After his education at a Yorkshire school, young BIRKBECK was sent to Edinburgh, that modern Athens, at whose springs and fountains of learning the aspirants to eminence

may drink deeply and effectually. Here he attended the hospitals, and the lectures of the professors in that science, which was to qualify him for the future pursuit of his intended profession, namely, that of MEDICINE.

On his coming to London, Dr. BIRKBECK found, like many other men of science, that to possess a talent, and to profit by it, or to make it known and appreciate it, were very different things: wanting patronage, and the advantage of a name, he felt himself neglected as a physician; and that celebrity was not to be gained by modest merit alone, especially when it had to encounter the obstacles that the reputation of such names as Warren, Reynolds, and Vaughan, naturally placed in the way; it was well, therefore, that the DOCTOR possessed a decided literary turn, and that he lost no time to put his talents to the test. He became a writer to a review, then in course of publication, in which some bold criticisms of his production were inserted, and with great severity he attacked those practitioners who seemed to aim at notoriety by innovations on the established system of the medical science; but his indignation was either too severely expressed, or too little regarded, as it did not give him a passport to the favour of the public, and the work was relinquished. In the more immediate duties of his profession, Dr. BIRKBECK had better success. He was appointed physician to the Aldersgate Dispensary, the duties of which station he performed with adequate skill and attention: and about that time he became a member of several other medical institutions of the metropolis; and by his talents and activity was daily rising into notice.

Mr. BROUGHAM, now LORD BROUGHAM and VAUX, published a treatise on the advantages of education to the people at large, and the facility with which it might be effected. The plan proposed by the author of this philanthropic and philosophical treatise was to encourage application to proper books, and to induce mechanics and others to devote their leisure time to the acquisition of useful knowledge; with the view to effect so desirable a purpose, a ready access to books was indispensable, and some well-qualified instructors were also necessary: these things were not to be accomplished without some previous exertions and expenses; accordingly subscriptions were set on foot, and an institution was established for a practical execution of that plan, the theory of which had been so ably promulgated: no sooner was the design undertaken, than Dr. BIRKBECK embraced its object with great zeal and ability, and was, in fact, founder of the Mechanics' Institute, which he supported by the publication of a periodical work for the use and improvement of its pupils. The lectures given by the Doctor enlightened numbers of his hearers, and opened their minds not only to the knowledge, but also to the true use, of combined science and skill, teaching how to facilitate the operation by the help of auxiliary rules mathematically demonstrated.

In this attempt to elevate the mind, and give labour a leaven of genius and honour, Dr. BIRKBECK has not escaped the animadversions of those censors who are always more ready to deride than to devise anything for the amelioration of the condition of the less fortunate part of mankind.

Objections have been raised, coupled with remarks on a kindred, though a more exalted institution, relative to the practice of inculcating knowledge independently of those maxims which maintain the orthodox principles of a divine revelation; those objections (we believe) do not continue to exist, and when they did exist they would have no bearing on the character of Dr. BIRKBECK, as a promoter of the learned institution to which this remark particularly refers.

Dr. BIRKBECK is a member of the Society of Friends, *fury and despair*. INTERROGATION is often found in all who, though sincere, warm, and constant in their creed, are not addicted to doubtful disputations on matters of Faith; and, therefore, looking at the liberal design of universal erudition and instruction, he might, unblamably on his part, overlook the necessity of any exclusive doctrines in divinity: for our own part, we readily acquit the philosopher of any design to annihilate religion, because he does not direct his chief attention to theology. Upon the whole, Dr. BIRKBECK may be ranked among those luminaries of an age who are especially calculated to benefit mankind, and through whose industry and intelligence the human race is destined to receive that full portion of light and knowledge with which the CREATOR intended to adorn the noblest work of his *handmaid*—NATURE, whom he has invested with the dominion of the UNIVERSE.

ON WRITING.

THERE is in all good writers a *coherent* body of natural thoughts, taken from common sense, and derived from the very essence of the subject. Indeed, it is the essence of the whole composition; for it is on this uniform ground that the flowers of elocution are strewed with choice and taste.

The order in which we place the expressions can have but two objects in view; either to give them more grace, or more energy. But it rarely happens that grace and energy are separated. The arrangement of the words contributes at once to give ease and clearness to discourses, from which gracefulness proceeds; and to make the ideas join properly, to combine them mutually, proceeds energy.

When this connexion is sensible to the ear and the mind, by the concert and agreement of the sounds which compose the words, then results from it the charm of what is called HARMONY.

To give force or strength to a sentence, it is sometimes better to repeat the conjunction; as, "The characters of Henry, and John, and James, are truly dignified and majestic." It is also better to suppress one of two verbs; as, "Complaisance makes friends, and truth enemies."

Among the *figures of thoughts*, we make a distinction between those which excite attention, and those that chiefly affect the heart. To move the heart, we must apply to the mind; and to awaken the mind, we must interest the heart.

The AROSTROPHE is used, not when we direct our speech to any particular person, but when we turn it off from those we talked to in the beginning, in order to speak to others. We may use this figure towards the living, the dead, to persons present and absent, and even things inanimate.

The figure PROSOPOROPHIA opens tombs, raises the dead, makes heaven and earth speak, and also all beings, whether real, abstracted, or imaginary. Among all the turns of elocution, this is conceived one of the finest.

The figure ANTITHESIS opposes words to words, and thoughts to thoughts. It is a figure that easily occurs to the mind; but when it returns too frequently, it mars the style rather than adorns it.

The principal figures made use of to affect the heart are, EXCLAMATION, which breaks out with *interjections*; CONFESSION, which acknowledges the crime in order to obtain pardon; DEPRECATION, which recourse to *prayers and tears*; COMMUNICATION, which vents itself in *menaces*; and IMPREGATION, which is expressive of

these figures, and serves to render the style very vehement.

But amongst all the *oratorical figures*, there is none that contributes more than AMPLIFICATION to express a sentiment in every sense of which it is capable. An important thought that passes like a flash of lightning, scarcely perceived; if it be repeated in an artless manner, it no longer has the merit of novelty. It therefore must be presented several times, and each time with different decorations; so that the mind being taken up with this sort of artifice, may dwell with pleasure on the same subject, and receive every impression intended to be given.

HARMONY, in general, is the accordance of several things existing in the same genus. Thus, colours have harmony in a picture, sounds in music, thoughts in discourse, as also have words and turns in style. But to speak eloquently, much depends on a strict attention to the elementary sounds.

Observe. The elementary sounds, and the primordial* combinations of language, form a common mass, whence nations have drawn all their words, which they formed agreeably to certain laws, introduced among them by custom, habit, example, necessity, art, occasion, or chance.

It is proper to observe, in regard to sounds:—1. That the more they approach to the simplicity of their elements, the sweeter they are, and easier to pronounce. That the longer they are, the more melodious are they. That the more clear they are, the more sonorous. On the contrary, the more they are compounded, the more they are dry, harsh, and dull.

As to the combination of sounds, i must be observed, that the vowels, which join in uniting them together are always soft; that those which do not join produce a sort of *hiccups*; that the consonants which join one another are harsh more or less, because the configuration they give to the vowel becomes bound and seems overcharged.

The perfection of this kind consists in so disposing the consonants, and the vowels, that they mutually give other consistency and firmness; that the consonants support the vowels, and that the vowels in their turn combine with the consonants. Therefore, in order to speak and write well, we should make choice of words that are nervous and soft, and at the same time flow freely and lightly, that are polished without being effeminate, and elevated without being harsh and stiff.

OF STYLE.—Style results from the choice in the collection and arrangement of words, according to the laws of harmony, as regards the elevation or the simplicity of the subject. It is the manner, the tone, and the colouring, that reign sensibly in a work, or in any of its parts.

Every country possesses a language and a style suited to the genius of its inhabitants. The principal distinctions of style arise from the diversity of subjects. The same mode of expression would be as inconsistent upon different occasions, as the same dress for persons of different ranks, or for different seasons of the year. A plain style rejects all ornaments. It should possess perspicuity and precision; rhetorical figures need not be resorted to. This style is peculiarly suited to philosophical discussion, which does not admit of much ornament. Its chief merit is, that its meaning is intelligible to all, and that it requires no explanatory circumlocutions. The simple style is also used in familiar conversations, letters, and fables; in which it should be pure, clear, and without any apparent ornament.

The middling or florid style has all the clearness of the

* Original, existing from the beginning

simple style, and admits of all the ornaments and all the colouring of elocution.

The *sublime style* is that which makes nobleness, dignity, and majesty, reign throughout a discourse. All the thoughts in it are noble and elevated, and all the expressions are weighty, sonorous, and harmonious. When this style, however, is elevated to the utmost extent of its powers, it has much of the varieties and beauties of what is called the truly sublime; for the truly elevated style, and what is called sublime, are not exactly the same thing. The latter is everything that raises, seizes, and suddenly disturbs the soul. It is a momentary flash. The elevated style may be long kept up; it is a lofty strain, it is noble and majestic.

These several sorts of style are often found in the same work, because the subject matter sinking and rising, the style which is, as it were, borne along by the matter, must rise and fall with it. But we must carefully contrive the passages and the connexion, to soften and heighten the tints insensibly; except in certain cases, where the matter breaking off suddenly, the style is obliged to change abruptly.

To the styles above mentioned may be added the *PATHETIC*, which speaks the language of *NATURE*; but in its formation *art* and *labour* have no share. There is a material difference between painting to the imagination and to the heart; in the latter no effect can be produced, unless it seem to be the work of nature only.

Among all the qualities that characterise a *GOOD STYLE*, that of *simplicity* surpasses all the others. Nevertheless, we must not confound *simplicity* with *bluntness*, for the latter is a flight of the imagination which escapes us unawares, and sometimes to our prejudice; whereas *SIMPLICITY*, on the contrary, induces warmth, energy, and vivacity, and is also the language of frankness, freedom, and ease.

GRATITUDE.

GRATITUDE is the memory of the heart; a thankful remembrance of kindness received, combined with a generous desire to confer pleasure.

Gratitude is a certain indication of greatness of soul, and nobleness of sentiment, and the actions of which it has been productive, are among the most dazzling and delightful instances of human virtue. We may farther remark, that the greatest heroes have ever been the most sensible of services done to them. PYRRHUS, ALEXANDER, and ALPHONSO, king of Arragon and Sicily, bore constantly in memory the most trivial services.

The earth yields up abundant treasures to those who have but lent it seed; and the rivers roll back into the sea the waters which they have received from it in night vapours. The animals too which are the noblest in their instinct, are those which are the *most grateful*.

A truly grateful heart magnifies kindness by its own innate generosity, and is not only willing to make the greatest sacrifices for one who has obliged him, but, having done so, remembers the favour he has received, and forgets that which he has conferred. Real **GRATITUDE** receives a favour with confusion, and returns it without measure; and is not the less grateful, even if the former benefactor has become an enemy. Nay, even his death will only cause the gratitude of feeling and action to be transferred to his posterity.

To tell a benefactor that we are grateful to him, is only *not to insult him*; it is common civility, but no proof of gratitude or adequate return of his kindness. It is to others that we should tell our thankfulness; by doing so, we at

once evince our gratitude, and pay a just tribute to the virtue of our benefactor. Moreover, **GRATITUDE** begets us friends in all who perceive it in us; for the generous feel a noble pleasure in resounding virtue, and even the mean will prefer to confide in one whose virtue they are not able to imitate.

When the once proud **WOLSEY** had fallen under the displeasure of **HENRY VIII.**, his equals deserted, and his inferiors despised him; but a private gentleman, named **FITZ-WILLIAMS**, whom in the plenitude of his power he had patronized, took part with him, and lauded his talents and good qualities. Still further to evince his **GRATITUDE**, he invited the disgraced minister to his country-house, where he received and entertained him, with as profound a respect as if he had still been the favourite of his sovereign, and the dispenser of wealth and honours.

This matter being told to the King, he sent for **FITZWILLIAMS**, and angrily asked why he had dared to harbour **WOLSEY**; knowing him to be accused of high treason. "Sire," replied the noble-hearted man, "it is not the disgraced minister or the state criminal that I have received into my house, it is my benefactor and protector; he who has given me bread, of whom I hold the fortune and the tranquillity I enjoy. Ah, sire, if I had abandoned him in his misfortune, I should have been the most ungrateful of men."

This **GRATITUDE** met with its due reward, for his reply excited the admiration of the King, who conceived the highest esteem for him. He was instantly *knighted*, and soon after made a Privy Counsellor.

INGRATITUDE.

In the catalogue of human vices, there is scarcely one more disgraceful or more hateful than that of **INGRATITUDE**. When we are plunged in misery, and wish for aid, how ardent are our prayers for it! Equally ardent should be our **GRATITUDE** towards those who extend to us the aid we need, and rid us of the distresses, or the afflictions by which we are oppressed. But it unfortunately happens, that our **GRATITUDE** terminates with our necessities, and that we look with indifference upon kindnesses from which we can no longer reap any benefit. We magnify the services which we may have been able to render our *benefactor*, and by wicked casuistry persuade ourselves, that if he is not under an obligation to us, we have at least squared our accounts, and made ourselves free from any obligation to him. Even this species of **INGRATITUDE** is truly detestable; but there is another still more so than even this.

This latter species of **INGRATITUDE** may be defined to be the *retribution of evil for good*.

The Divine Founder of our religion commands us to return *good for evil*; which beautiful precept speaks eloquent volumes against returning evil for good. Like all the rest of our vices, **INGRATITUDE** begets its own punishment. He who has been ungratefully *requited* for his kindness, becomes at length so disgusted as to close his ears, and harden his heart, to the wailing of the **UNGRATEFUL**, who thus deprive themselves of the assistance which they vainly crave.

The **YOUNG**, uncontaminated by bad precept, and bad example, are *safely* guilty of deliberate ingratitude. They do not designedly plant a thorn in the bosom which has pillow'd their helplessness, or poison the stream whence they have drunk refreshment and *nutrition*. But though they

are not guilty of wilful INGRATITUDE, they frequently, though unconsciously, inflict pain upon those to whom they are indebted for tenderness, protection, subsistence, and indulgence. In the exuberant gaiety incident to their time of life, young persons give a thousand shocks, and cause a thousand anxieties to those, whom their every word, deed, and gesture, should be calculated to soothe, satisfy and delight.

If towards our earthly parents our conduct ought to be rigidly respectful, thankful, and affectionate, how much more so should it be towards their, as well as our Creator, Preserver, and Benefactor!

Every thought, as well as every word, should be calculated to please Him; and we should dread, as the worst of evils, every thing which can or would be offensive to Him.

INGRATITUDE to God is not less base than INGRATITUDE to our earthly benefactors; and to the baseness of the latter, the former superadds the innocent peril in which it involves us.

OR THE BUILDINGS AND CITIES OF VARIOUS NATIONS. SECTION I.

NOTHING, perhaps, more strongly attests the greater or less civilization of a nation than the style of its buildings and the extent of its cities. In proportion as man becomes more and more civilized, he also becomes more and more luxurious; and in proportion as his luxuriousness and the means of indulging it increase, so also does his desire to increase the internal commodiousness and external ornament of his place of abode.

It is important, therefore, to impress the minds of our readers with a knowledge of the state, in various nations, of that which affords a criterion so unerring as the comparative civilization of those nations. It is under this impression that we are about to devote a chapter to the subject.

Savage nations are sometimes found so utterly destitute of the means, or of the art, of building, as actually to have no other dwelling places but the natural clefts of the rock, or the cavities formed in large trees, by the continual action of the elements during a long series of ages. Few savages, perhaps, are now to be found who are so utterly without a resource; for civilized man has penetrated so far into the hidden and obscure parts of the globe, that even savage nations have almost universally derived some, though probably only an inconsiderable, share of benefit from his superior attainments and experience. Formerly however, many savage nations were in this condition.

SAVAGE NATIONS who do essay to construct themselves an artificial shelter from the elements, generally have huts of very rude construction. The materials used in constructing them vary, of course, with the situation of those who construct them. The most usual materials, however, are rude stakes, whose lower ends are planted firmly in the earth at a considerable distance from each other, and whose upper ends are lashed firmly together, forming a rather large and regular cone. These are again interwoven with small twigs, which operation, it is remarkable, is performed, even by the most completely savage people, with considerable skill and neatness. When the hut is thus far erected, it is covered either with leaves or with clay worked with water to proper consistency. Which of these materials is used, depends partly upon the taste, but mainly upon the situation, of the builders. Whichever of them is used is carefully covered

all over, except a small aperture at the bottom for ingress and egress, and a hole at the top, which serves instead of a chimney. Huts of this kind are universally in use among the savages of North America. In each of them a family resides; in some as many as two or three families; and a scattered group of these constitute a wigwam or village.

In Southern Africa the savage tribes form their rude huts of bent twigs, smeared with a coarse mortar of water and earth. The shape of the huts of these tribes is almost exactly that of a bee-hive. They have a hole at the top for the egress of the smoke, and a small aperture at the side to serve as a door. Like the North American Indians these people kindle their fires upon the naked earth in the centre of their tent. They consequently are perpetually enveloped in smoke, which seriously damages their sight, and conduces towards the shrivelled and prematurely aged appearance observable in their features. The African tribes erect their huts in a large circle, and the enclosure thus formed is occupied by their cattle. A circle thus formed is termed a kraal; and since the English missionaries have benevolently resided among these people, and weaned them from their dirty and ignorant habits, some of these kraals have as neat and comfortable an appearance as some European villages; though it must be owned that, from the absence of chimneys, from the invariable neglect of dividing the huts into two or more rooms, and from sundry other circumstances, the balance of internal comfort and accommodation is largely in favour of the poorest and meanest cottage of the civilized nations of Europe.

The North American tribes of the frozen regions, the Laplanders, and the natives of Northern Siberia, generally have tents, or huts formed of the lightest materials they can collect, for their summer habitations. Such puerile habitations would, however, be of little avail to them during their extremely severe winters. So severe, indeed, is the weather which they have to endure during this season, that if they expose any portion of their bodies to the cold, during only a few minutes, it becomes frozen; and death, in consequence of mortification thus produced, is by no means an uncommon occurrence. In winter, therefore, they are compelled to retire to habitations more competent to afford them protection from the chilling blasts. These habitations are built with thick and massive stones, covered without, and sometimes within also, with turf and mosses. In the whole building there is only one aperture, which serves at once for door and chimney. The inhabitants of Lapland and Greenland guard themselves still more completely against the biting winds of their cold climates, by having a vaulted passage of considerable length, and sometimes built with a curve to serve them as the entrance. By this means the ingress of the winds is, indeed, more effectually prevented; but so also is the egress of the smoke, which in civilized nations we regard as being very nearly as important a matter. Some of the Greenlanders and Laplanders go so far in their provision against cold as to build their residences half under the earth. In this case, the entrance-place and chimney consist of a hole nearly at the top of the edifice, which is ascended without and descended within by means of a ladder. The operation of entering a hut of this description must, to our thinking, be very similar to that of going down the funnel of a furnace.

(To be continued.)

BERKSHIRE.

BERKSHIRE, an inland county in the Oxford circuit, is about 50 miles in length, 25 in breadth, and 120 in circumference.

It is bounded on the south by Hampshire; on the west by Wiltshire and Gloucestershire; on the north by the Thames, which divides it from Buckinghamshire and Oxfordshire; and on the east by Middlesex and Surrey.

It contains 22 hundreds, 12 market towns, 140 parishes, and 671 villages. It lies in the province of Canterbury, and diocese of Salisbury.

Its chief towns are, *Reading, Abingdon, Newbury, Windsor, Wantage, Hungerford, Wallingford, Maidenhead, and Oakham*.

The air of this county is very healthy. Its chief rivers are, the Thames, Kennet, Loddon, Oke, and Lambourn. The last, different from other rivers, is highest in summer, gradually descends on the approach of winter, and at last is nearly, if not entirely, dry.

This county formerly boasted a superiority in the staple of wool, but its chief manufactures now are sail cloth and malt. Its principal products are, wheat, barley, bacon, and butter. The most fertile parts of this county are those of the west and midland; but in the eastern part, towards Windsor, we find a considerable district uncultivated. The forest of Windsor has long justly been admired for its rural beauties, and the pleasures of the chase. It was particularly the theme of the harmonious Pope, a native of Binsfield, a village in its vicinity. Within the forest lies the *Great Park*, upwards of 22 miles in circumference, covered with stately trees, and well stocked with deer.

READING, the county-town, was formerly noted for its abbey, which was founded by **HENRY I.** It is now noted for its great trade, particularly in malt. It is delightfully situated on the river Kennet, on the high Bath road. The Kennet joins the Thames, a little below the town. This town is first mentioned in history in the year 874, when it is described as a fortified town, belonging to the Saxon Kings, but then in the power of the Danes. It was burnt by the Danes in 1006. There was formerly a castle, which was held by King **SIRRED**, but was afterward given up to **HENRY II.**, then Duke of Normandy, pursuant to an agreement made before the walls of Wallingford. This castle long since been demolished, and no traces of it are to be found excepting in the name of a street, called Ca-the-street. The principal streets are extensive, well paved and lighted, and the buildings in general are neat and handsome. It is also of considerable extent, busy, gay, and lively. It consists of three considerable parishes; viz., St. Lawrence, St. Mary, and St. Giles. It was formerly greatly celebrated for its woollen-cloth manufacture; but these, from a variety of causes, have fallen into decay. It was at Reading that **ELIZABETH WOOLNATT**, Queen of Edward IV., was first presented to the people as the consort of their sovereign, in 1464. It is also rated as the birthplace of **Archbishop Laud**, who was born in 1573, and beheaded on Tower-Hill in 1644; **Sir THOMAS WHITE**, celebrated for charities, and the founder of St. John's College, Oxford, was born here in 1492, the same year that Christopher Columbus discovered AMERICA; **Dr. MIVART**, the author of the best poetical version of the Psalms; and **WILLIAM BARKER**, a learned printer, were also natives of Reading.

ELFRIDA founded a Nunnery here about the year 180. Elfrida was the widow of Edgar, and mother-in-law to King **EDWARD**, the Saxon called the Martyr, who was

killed by a domestic of Elfrida at her command; and she is said to have built this Nunnery, among others, to expiate the murder. At this place, also, King **HENRY I.** laid the foundation of a stately abbey, about the year 1121, which he endowed for the maintenance of 200 monks, of the order of St. Benedict, whose annual income, at the dissolution, amounted to 1938*l.* 14*s.* 3*d.* Soon after the endowment of this abbey, the Nunnery founded by Elfrida was suppressed, and the land given to the Monastery. William of Malmesbury informs us, that this abbey had funds for entertaining the poor, strangers, and pilgrims. The last abbot of the place was **HUGH FARRINON**. This ecclesiastic refusing to deliver up his abbey to the visitors, a charge of high-treason was exhibited against him in 1539; and he, with two of his monks, suffered as traitors at Reading in the same year, and immediate possession was taken of the Monastery.

Fuller relates an anecdote of one of the abbots of this place, which is worthy of record. He acquaints us, that King **HENRY VIII.** having lost himself in the chase on Windsor Forest, made down to the Abbey of Reading about dinner time; where, having disguised himself, he sat at the Abbot's table, in character of one of the King's servants, and there he fed plentifully on a siloин of beef.

"Well fare thy heart," quoth the Abbot, "and here, in a cup of sack, I remember the health of his grace, your master. I would give an hundred pounds on condition could feed so heartily on beef as you do. Alas! my weak and squeezie (queasy) stomach will hardly digest this wing of a small chicken." The King pledged the churchman, and thanked him for his good cheer; and at a convenient time retired undiscovered. Some weeks afterwards, the Abbot being sent for to London was committed to the Tower, where he was kept a close prisoner, and for a little while fed with bread and water, being at the same time very uneasy, full of anxious thoughts, and revolving in his mind by what possible means he could have incurred his Majesty's displeasure. A siloин of beef being at last set before him, it is easy to imagine that he did the *knight* due

The King, just at this time, walked in from a joll where he had secreted himself, in order to observe the prisoner's behavior. Finding the Abbot's appetite much improved, "M. Leid," exclaimed the monarch, "presently deposit your *hundred pounds* in gold, else no going hence all the days of your life. I have been your physician; and here, as I deserve, I demand my fee for the same." The astonished Abbot thought proper to comply with the terms of the proposition; and glad to escape, returned to Reading lighter in heart and in purse than when he paid this involuntary visit to the capital.

At Bradfield, about four miles west of Reading, a monastery was built by King **IVAN**, some time before the year 699; but how it continued it does not appear.

The river **Kennet** separates the town of Reading into two parts, and in its passage forms several excellent wharfs. This river is navigable westward to Newbury, Hungerford, Fronfield, &c., and forms a communication between the **Severn** and the **Thames**. Reading is distant from London, by Oakhampton 39 miles, by Maidenhead 38*½*, and by Egham and Windsor Forest 37*½*. It is 8 miles from Henley, 15 from Wallingford, 16 from Basingstoke, and 17 from Newbury.

NEWBURY, situated in a fertile plain, is a very considerable town, watered by the Kennet, which passes through it near the centre. Its streets are spacious and well built; and here is a very large market-place, with a good trade. Newbury formerly boasted of its great superiority in the

manufacture of cloth. In the reign of HENRY VIII. John Winchcomb, commonly called "Jack of Newbury," employed in his own house 100 looms, and on an expedition against the Scots, marched to FLODDEN FIELD at the head of 100 of his own men, all armed and clothed at his own expense. The success which attended the English army in that expedition is well known; and we are told that the famous "Jack of Newbury," at the head of his little band, behaved with the most distinguished bravery. After the war was over, he returned to his native place, and at his own expense rebuilt the greatest part of the parish church of this town. His descendants remained in possession of considerable estates many years after his death, the last of whom was an heiress, who married the late LORD BOLINGBROKE.

Though WINCHCOMB was one of the most wealthy tradesmen of his time, and lived in the style of a prince, yet we find he was descended of very poor parents, who after giving him such an education as their circumstances would admit, put him an apprentice to a very rich clothier at Newbury. He was diligent in his business, and conducted himself with such propriety as to acquire the good-will and respect both of his master and mistress, and also of all who knew him. When nearly out of his time, his master died; soon after which, his mistress, though young, rich, and pressed by several suitors, made choice of her apprentice John for a husband. His wife dying in a few years after, "JACK OF NEWBURY" married one of his maid-servants, whom he had noticed for her good sense, modesty, and prudence, preferring her to any more noble or wealthy match, in the same manner as his mistress had before preferred him. He died at an advanced age, universally regretted, as he was universally beloved, leaving great riches to his wife, children, and all his relations, as well as many considerable sums to the poor, to whom he was exceedingly kind and charitable.

About the year 1397, Donnington Castle, near Newbury, became the property of CECIL, the father of English poetry, who settled here in order to taste the sweets of contemplation and rural retirement, having spent the greatest part of his life in the hurry of business, and intrigues of a court, during which time he had severely experienced the mutability of fortune. Here he spent the last two or three years of his life in a felicity he had not before known, but on the death of the King, going to court to solicit the continuation of some grants, he fell ill, and died in London, in the year 1460.

Two battles were fought near Newbury, between the forces of CHARLES I. and the Parliament, in 1643 and 1644; in the first of which, the excellent Lord Falkland was slain. Newbury is 56 miles from London, 17 from Reading, and 26 from Oxford.

WINDSOR, the present seat of royalty, is beautifully situated on a gentle ascent on the south-side of the Thames. It consists of several streets, and is well paved and lighted. Windsor is greatly celebrated for its magnificent castle, which was originally built by William the Conqueror, who, with a very wise policy (for the times in which he lived), erected strong castles in such parts of England as presented natural advantages of position. HENRY THE FIRST greatly added both to the extent and the strength of the original building, and the succeeding monarchs made it their usual residence alternately with the Tower of London. EDWARD THE FIRST, instead of merely adding to the building, had the whole taken down, except the Tower, and erected Windsor Castle and St. George's Chapel, nearly as we now see them. Subsequent monarchs made some alterations and went to vast expense in furnishing and

decorating the interior; but until his late Majesty, GEORGE THE FOURTH, caused the whole to be restored, and some portions to be added in a style corresponding to that of the main pile, nothing of consequence was done to the exterior of this edifice. As now seen, it consists of two wards or courts, separated by a massive round tower, called the Middle Ward; the two former wards being surmounted by several Gothic towers, and defended by batteries. The whole area of the castle includes a space of nearly thirteen acres of land, situated upon a gentle hill, which commands a very extensive view, from the level nature of the surrounding country, and leaving its base watered by the Thames. The highest part of the castle is the round tower in the upper court. This is appropriated to the residence of the Governor, generally a nobleman distinguished by his military rank and achievements; and commands a view of no fewer than twelve counties, as well as of the metropolis. Of all the royal residences, this is the grandest, and the most completely adapted for the sojourn of the King of England; and now that the exterior has been repaired, and the interior furnished under the directions emanating from the consummate taste of George IV., it would be difficult, perhaps impossible, to point out a residence in all Europe at all comparable to it. St. George's Chapel, founded by Edward the Third, is in the very best style of pointed architecture. The grand ornaments of the interior of the castle are its pictures, which are all originals, and from the hands of the most celebrated masters of the art. Some of them are extremely valuable. Seen from the forest, towards the close of a summer evening, this magnificent structure elicits the utmost admiration, and awakens sentiments of the purest and loftiest description. On the declivity of the hill adjoining the castle, is a most beautiful terrace, 1870 feet in length, which is justly esteemed one of the noblest walks in Europe. Its prospect from the round tower is particularly enchanting, from which the beholder can look into the counties of Berks, Middlesex, Essex, Herts, Bucks, Oxford, Wilts, Hants, Surrey, Sussex, Kent, and Bedford.

In St. George's Chapel was interred HENRY VI. in 1471; as also was EDWARD IV. in 1483. HENRY VIII. was buried here in 1546; and CHARLES the First, after his decapitation at Whitehall, was buried here in 1649. JOHN CAMPION, the illustrious Duke of Marlborough, died at Windsor in 1722. The universally lamented Princess CHARLOTTE of WALES was interred here in 1817; GEORGE III. after a reign of sixty years, aged eighty-two, was interred here in 1820; and his son GEORGE IV. in 1830.

At a little distance from New Windsor, stands Old Windsor, which Camden says has been falling into decay ever since the time of Edward III. At the conquest, Old Windsor contained 100 houses. Near Windsor are also two parks; one called the Little Park, and the other the Great Park, adjoining which is an extensive tract called "The Forest." Windsor is 22 miles from London.

MAIDENHEAD, situated on the banks of the Thames, over which it has an elegant bridge of 13 arches, is partly in the parish of Cookham, and partly in Bray. It was formerly called South Ealington. It is seated on the great road from London to Bath, and is noted for its inns, and for its great trade in timber and malt. This place was first raised from its obscurity by its bridge, which was first erected here about the year 1297. Before the erection of the first bridge, travellers used to cross the Thames at a place called Babham End, about two miles north of Maidenhead, where there was a ferry. Maidenhead is 26 miles from London.

WALLINGFORD, a very ancient town, was formerly a place of great magnificence; but at present it is of small extent, containing only about 2000 inhabitants. It had a strong castle, which was besieged in vain by STEPHEN; and here, that king and Henry II. concluded a treaty of peace in 1153; by which it was stipulated that Stephen should enjoy the crown during his life, and that Henry should succeed him. It had formerly twelve churches, but these were reduced to three in the time of RICHARD the Second. It is now chiefly noted for its trade in malt. It is 45 miles from London, 13 from Oxford, and 16 from Reading.

HUNTERFORD is a small town on the western extremity of the county, bordering on Wiltshire. It is noted for the best trout in England. **FARRINGDON** is noted for the death of Alfred the Great, who died here in the year 900. ROBERT, Earl of Gloucester, erected a castle here in the reign of King Stephen, but that monarch, after some resistance, reduced and levelled it with the ground. Immediately in the vicinity of the town is Farringdon Hill, which commands a rich and extensive view over different parts of Oxfordshire, Gloucestershire, and Wiltshire, in addition to the whole of the beautiful and interesting vale beneath. About two miles north of Farringdon is Badcot Bridge, of great antiquity and venerable appearance, but more particularly interesting from the relation it bears to history. On this spot, a memorable battle was fought in the year 1387, between ROBERT DE VERE, Marquis of Dublin, the highly-honoured favourite of RICHARD II., and the discontented BARONS, headed by THOMAS, Duke of Gloucester, the Earl of DURHAM, afterwards HENRY IV. The troops of the favourite were routed, and he himself only escaped by plunging on horseback into the Thames, and swimming across the stream.

WANTAGE, formerly a Roman station, is noted for being the birth-place of ALFRED THE GREAT. It is also noted as being the birth-place of BISHOP BUTLER, a contemporary and fellow-pupil of Dr. WATTS.

OAKINGHAM, a small town near Reading, is noted as the birth-place of MR. CRUTWELL, the author of a voluminous *Gazetteer*, who was born there in 1743. As Oakingham is the only town in Windsor Forest, all the forest courts are held here. Oakingham is 32 miles from London, and 8 from Reading.

Among the most memorable persons of Berkshire, were GEOFFREY OF MONMOUTH, the noted historian, and Abbot of Abingdon Monastery; Sir THOMAS HUNTERFORD, the first speaker of the House of Commons, a native of Hungerford; Sir JOHN HOLT, who for many years was Lord Chief Justice was a native of this county. He was one of the ablest lawyers this country ever produced.

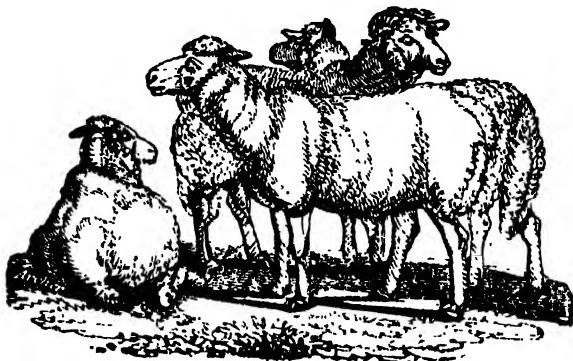
Among the antiquities of Berkshire not already noticed, are the traces of a large Roman camp, commonly called Cesar's camp, at *East Hampstead*, near Oakingham.

ABINGDON is a place of considerable antiquity, having been famous for the residence of some of the old BRITISH KINGS, as well as for a *Synod* held there in the time of the SAXONS. It was formerly remarkable also for possessing one of the richest abbeys in England, from which it took its name. GEOFFREY OF MONMOUTH and EDWARD THE MARTYR are said to have been interred here. The town is neatly built, and consists of several well-paved streets, which centre in a spacious area where the market is held. It is chiefly noted for its manufacture of sacking, sail-cloth, and malt. It is 6 miles from Oxford, 55 from London 10 from Wantage, and 10 from Wallingford.

The Population of the principal Towns.

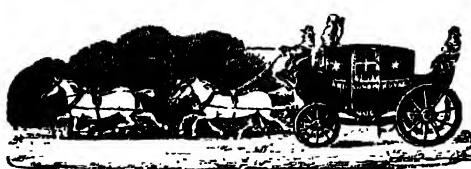
Reading	15,595
Abingdon	5,259
Newbury	5,977
Windsor	7,103
Wantage and Parish,	3,282
Hungerford	2,283
Wallingford	2,467
Oakingham and Parish	3,139

This county sends nine members to Parliament; viz., for the County, 2 for Windsor, 2 for Reading, 1 for Wallingford, and 1 for Abingdon.



SHEEP

AMONG the most valuable animals to man are sheep, as it supplies him with food and clothing. The male is distinguished by the name of *Ram*, the female is called *Ewe*, and her young *Lamb*. From their great utility to us, they have been greatly multiplied in every quarter of the globe. The Ewe produces every year one Lamb; sometimes, but seldom, two. Their flesh affords us excellent food; and their wool, how many hands does it employ! How many thousands does it give bread to, in manufacturing our cloths, our stuffs, our stockings, our hats, &c. Of all these fabrics, some are fine and dear; others, coarse and cheap. Its bowels serve us for making strings to musical instruments, such as violins, harps, and for many other purposes. The skin of the Sheep is also of considerable value, and answers for making breeches and binding books; it is also made into parchment.



MAIL COACH.

MAIL COACHES were set up by government for the speedy conveyance of letters and small parcels of value, which require great care and safety, and also for transmit-

ting species, when that is necessary to be done, from the metropolis to any part of the country, or from thence to London, in payment for merchandise, or in the process of trade and dealing. Passengers also were formerly considered more safe by travelling in those coaches than by the vehicles then on the roads called *Heavy Coaches*, and the rapidity with which they accomplished their journeys made it desirable to go by them when expedition was required; the safety they afford consists in the regulation under which they are placed, and the competent guard by which they are always attended; but since the roads have been so much improved as they have lately been, many coaches belonging to private persons or companies of speculators have rivalled the mails in speed and accommodation, if not in safety: the horses by which the mail coaches are drawn are provided from the best breed of *roadsters*, and the gear and tackle are carefully kept in good order and repair, no expense being spared to render them free from accidents on the journeys. Other coaches may be as well equipped by their proprietors, but perhaps every one cannot so well afford the expense of substantial materials, for the construction and repair of their carriages and harness, nor the purchase and maintenance of cattle to expedite them on the road.

The term *mail-coach* is derived from their carrying the mails or bags of letters, which they have to deliver to the different postmasters at certain stations called post towns. In various parts of Great Britain and Ireland, the word *mail*, signifies also *armour* or *defence*, and therefore as these coaches are protected by a guard well armed, they may appropriately be called *mail coaches*.

The appearance of these coaches on the road is somewhat imposing, exclusive of the advantages they afford for correspondences between merchants and manufacturers, and to commerce in general; they have a noble look; and tend to enliven the roads upon which they run. The elegance and grandeur of one of these vehicles may be seen in the representation given by the cut, but they are objects of daily appearance, and only less noticed because they are so, nevertheless they afford a striking instance of the value of mechanism, and show to what extent improvement for public convenience may be carried.

OF THE BUILDINGS AND CITIES OF VARIOUS NATIONS. SECTION I.

Continued from page 304.

The Esquimaux tribes, inhabiting Northern Georgia, make the extreme cold from which they need protection aid them in procuring it. They have, of course, an immense quantity of snow, and the extreme intensity of their climate hardens it, almost as soon as it reaches the earth, almost to the consistency of marble. Cutting the snow while in this condition into large blocks, as we cut stone in this country, they build their huts with it, closely lining the inside with skins of beasts, moss, and branches of trees. Though the exterior of these huts is thus formed of a material the very sight of which makes us natives of a more temperate climate shiver, it is said, by those who have had ample opportunities of ascertaining the fact, that these huts are not merely endurable during the winter, but exceedingly snug and save the unpleasant effects of the smoke — comfortable habitations.

In the frozen regions each hut commonly contains two or three families; and it is by no means uncommon for the domestic animals belonging to them to share their accommodation, and to increase the squalid filth of the whole. An extensive skin of a beast serves as a kind of curtain to divide the populous hut into as many portions as there are families, during the night; but in the day-time these are taken down, and they promiscuously mingle in the hut, and enjoy the warmth and light afforded by a large turf lamp; to supply which with oil is one of the most indispensable and attentive cares.

The savage nations of the Torrid Zone have, in the construction of their habitations, a very different object in view from that which is aimed at by the people just named. In the Torrid Zone the air is the welcome guest of every hut; what the inhabitants wish to guard against are the rain and the dews; which in hot climates produce the most pernicious and frequently fatal effects upon the human frame. In nearly all the parts of the Torrid Zone the huts are constructed of whole or slit canes, very neatly twisted. The frame-work of the hut being completed of this material, in this manner the outside is covered with leaves, and the inside lined with light mats, well calculated to resist the tremendous torrents common in these parts during what is emphatically called "the rainy season." These huts are in common use among the very poorest people in Hindostan, and even in some parts of China.

Half-civilized nations do possess somewhat more of the principles and the result of architecture than mere savages. But the superiority in this respect is chiefly observable in the dwellings of the great, and in the temples dedicated to superstition. The habitations of the poor are in nowise superior to those of the generality of savage nations; and to some of them, those of Polynesia for instance, they are decidedly inferior, whether as regards the ingenuity of their structure, or the amount of comfort they afford to their occupants. Such is the case in most, if not in all, of the half-civilized nations of Asia, in Poland, in Russia, and throughout a very considerable portion of Austria, Germany, and Ireland.*

Mere mud hovels, the flooring of which is formed by the natural earth, and is consequently in a state of un-holesome dampness during the greater portion of the year, are the dwelling-places of the poorer classes in all these countries. Straw or heath is strewed over the floor, and in many cases serves not merely as the only carpet, but also as the only bed of the wretched peasantry. This is almost generally the case with the very poor peasants of Ireland, whose wretched bed accommodations are frequently rendered still more uncomfortable and filthy, by being shared with their cows, horses, and pigs. It would be an act of real usefulness to persuade the common people of all countries to improve the construction of their buildings, and to make cleanliness a portion of their domestic economy. This would be beneficial, not merely in increasing the comforts of the people themselves, who are so accustomed to squalidness and ill accommodation that they would probably feel both difficulty and repugnance on their first essaying to exchange them for cleanliness and comfort, but also in diminishing the prevalence and the virulence of contagious disorders. In many countries, however, insuperable obstacles exist to effectually ameliorate the condition of the extreme lower orders in

* For the cause of the existence of such a striking proof of semi-barbarism in a country so geographically near to, and so politically identified with, England, see our remarks on Ireland in the articles "of Learning," and "of Agriculture."

this respect, Ireland is one of these countries. So thoroughly accustomed are the people of the lowest class in Ireland to their own wretched style of living that they will with a suspicious and unfriendly eye any attempts which benevolent and wealthy persons make to improve it. In some parts of Ireland the neatly white-washed and substantially-furnished cottage is to be seen, and even small villages, consisting of similar neat and healthful dwellings, are to be found upon some estates. But the owners of these estates have only succeeded in causing these beneficial improvements to be made after an enormous expenditure of money, and after encountering obstacles, and overcoming opposition, sufficient to dishearten and disgust any one not possessed of a mind of the very highest order, both as to benevolence and energy. And the examples thus nobly set are so far from exciting a laudable and useful emulation, that they are rather the subjects of a malevolent feeling in the minds of the mass of the lower orders towards the wealthy and benevolent land-owners who have originated them; and of a feeling of contempt, if not of hatred, towards those who have been bold to live under such landlords, and wise enough

to avail of the opportunities benevolently offered to them for promoting their social happiness and welfare.

But though the very lowest orders of half-civilized nations, and some of the fine class even in civilized nations, thus wretchedly accommodated as to dwelling-places, are superior to the very d^restly situated. This is the case even in half-civilized nations, and it is still strikingly so in civilized ones.

The great proficiency which such nations have made in the arts enable them, and the luxury engendered by commerce inclines them, to make the dwelling-places of all ranks substantial and convenient, and those of each rank to differ from each other more in extent and ornament than in positive usefulness.

In highly-civilized monarchical governments the art of building always attains to a very high degree of perfection. For, in addition to the pride of wealth and nobility, there is superadded the pride of monarchy, and of those who live beneath its sway. The house of a substantial and independent farmer in England, for instance, possesses all the actual comforts requisite to the perfection of a dwelling-place as fully as the more spacious and ornamental mansion of the wealthy peer; which, again, contains all the requisite accommodations in fully as great perfection as the stately and beautiful castle at Windsor. But the free subjects of a limited monarchy think, and justly too, that their ruler ought to be lodged in a style of magnificence proportionate to his high dignity and great usefulness. This and honourable feeling it is that gives birth to the magnificent and stately palaces which adorn the limited monarchies of Europe, and in which England especially excels. The purity of the Protestant religion is such that its professors require no external pomp or unmeaning, though splendid, ceremonial to hire them to pious exercises. But a people who have just notions of what is due to the dignity of their temporal monarch, can scarcely be deficient in their ideas of what is due to the honour of his ard their God, Creator and Preserver. Accordingly, temples still more spacious and still more massively grand than the palaces of temporal kings, are consecrated to the worship of the great Creator of all things. The demand for buildings of this kind has created a distinct profession, which dedicates its studies and its exertions to the erection of such edifices. Though the fame, hallowed and increased by the lapse of long ages, has given to the names of the great architects of Greece and Italy a greater individual splendour than is attainable by

any modern, it may very fairly be questioned whether any nation could ever boast such a galaxy of architectural talent as has been produced and fostered in England.

Our architects have not merely copied all that antiquity has left worth copying in architecture, but they have infinitely improved it. To its elegant lightness they have given solidity and strength, and to its massive proportions they have given a light and graceful beauty; and there are at the present moment innumerable buildings in England which nothing but our natural and pardonable, if not laudable, prejudice in favour of the works of antiquity, prevents us from acknowledging to be equal, if not superior, to the best and most-admired among them. We must not, however, forget that we have undertaken to write an historical sketch of the state of building and not a critique upon it. To the former subject, then, we will now return. The cities of Europe have, of course, different degrees of perfection; but as a whole they must be acknowledged by all candid and competent judges infinitely to surpass those of all other parts of the world. They have a greater abundance of large and ornamented buildings devoted to public and charitable purposes; they are more in number; and both as regards their whole extent and the size, plan, and beauty of their squares and streets, are unequalled, if not inimitable.

The continental cities abound in great and beautiful public buildings; but here our eulogium of them must terminate: for the streets are almost invariably planned in a most unhealthful and inconvenient scantiness of width, and they are for the most part destitute of side pavements for foot passengers, who are thus exposed not only to considerable inconvenience and annoyance, but also to very considerable peril. These cities, too, from being built so narrowly, are exceedingly dark, crowded, and unwholesome; and have all the obstacles to commerce and convenience, and all the lurking places for crime and disease, which the city of London had previously to the occurrence of that fire which destroyed so very large and important a portion of it, and which, though it was at the time justly regarded as a national calamity of great magnitude, has ultimately proved to have been a very great blessing.*

(To be continued.)

THE RACE HORSE.

The portrait represents that famous horse ECLIPSE, of so much celebrity in the annals of sporting, whose strength and swiftness gave him the victory over many competitors in the race. He is one of that noble species of animals that have been given to man for his use, but too often, it is to be feared, abused by him. No animal is more tractable nor more useful than the Horse, and he possesses a great share of sagacity, both in understanding, and obeying his rider or driver, and also in remembering the roads by which he has travelled, and the places at which he has been accustomed to stop. The horse is naturally courageous among quadrupeds and in the field of battle, where he shows the most undaunted resolution, undismayed by the roar of cannon or the point of the bayonet, and this is not insensibility, but actually the same sort of animation as that which fires the human breast in the heat of conflict, and in the midst of danger. Yet, like many a human hero, the

* The plague, which previous to that fire was a complete annual scourge, has never since made its appearance.



Horse is subject to fear from trifling causes: the rustling of leaves on the boughs of a tree; the sudden appearance of any strange object, or an unusual sound, will fill him with terror, and put him to flight; equally alarmed has many a brave man been by an unexpected surprise, or an event of comparatively little importance, these seemingly irreconcileable qualities exist in man as well as the Horse.

The *Parthians* are supposed to have been the first people who tamed and subjected the Horse to their use and service, and appearing mounted in the field before their enemies, gave rise to the idea of that fabulous monster the Centaur, as they imagined the man and Horse to be only one animal. In Arabia the Horse is highly esteemed, and the Cossacs of the Ukraine, in the Russian dominions, are said to value their horses above all that they possess, beside, many instances of which have been related by travellers. Another trait in the disposition of the Horse, is the care he will take not to do harm or injury to any living thing that may fall before him; for if at full speed he will endeavour to step aside, or step over the prostrated man or animal of any kind, and will not wantonly tread upon it if he can possibly avoid it. Such is the character of this noble and useful beast in his life, and at his death his hide furnishes a material for the workman to make trappings for his survivors.

A LIST of the DISFRANCHISED BOROUGHS according to the REFORM ACT.

Boroughs.	Counties.	Boroughs.	Counties.
Amersham	Bucklingsh.	Callington	Cornwall.
Wendover	Ditto.	Fowey	Ditto.
Winchcombe	Sussex.	Lostwithiel	Ditto.
Seaford	Ditto.	Gatton	Surrey.
Steyning	Ditto.	Blechingly	Ditto.
Bramber	Ditto.	Haslemere	Ditto.
East Grinstead	Ditto.	Dunwich	Suffolk.
Old Sarum	Wiltshire.	Oxford	Ditto.
Ludgershall	Ditto.	Aldeburgh	Ditto.
Hindon	Ditto.	Breistol	Devonshire.
Great Bedwin	Ditto.	Plympton	Ditto.
Heytesbury	Ditto.	Okehampton	Ditto.
Wootton Bassett	Ditto.	Aldborough	Yorkshire.
Downton	Ditto.	Boroughbridge	Ditto.
Newton, Isle of Wight	Hampshire.	Hedon	Ditto.
Yarmouth, ditto	Ditto.	Queenborough	Kent.
Stockbridge	Ditto.	New Romney	Ditto.
Whitechurch	Ditto.	Castle Rising	Norfolk.
St Michael's	Cornwall.	Higham Ferrers	Northampton.
Bossiney	Ditto.	Brackley	Ditto.
St. Mawes	Ditto.	Weobly	Herefordsh.
West Looe	Ditto.	Newton	Lancashire.
St. Germains	Ditto.	Ilchester	Somersetsh.
Newport	Ditto.	Milborne Port	Ditto.
Camelford	Ditto.	Minehead	Ditto.
Tregony	Ditto.	Aleburgh	Suffolk.
East Looe	Ditto.	Bishop's Castle	Shropshire.
Saltash	Ditto.	Appleby	Westmoreland

LIST of the BOROUGHS which are reduced from TWO to ONE Member.

Boroughs.	Counties.	Boroughs.	Counties.
Petersfield	Hampshire	Rye	Sussex.
Christchurch	Ditto.	Liskeard	Cornwall.
Ashburton	Devonshire	Launceston	Ditto.
Dartmouth	Ditto.	St. Ives	Ditto.
Eye	Suffolk	Helston	Ditto.
Westbury	Wiltshire	Reigate	Surrey.
Wilton	Ditto.	Hythe	Kent.
Malmsbury	Ditto	Droitwich	Worcester.
Calne	Ditto.	Thirsk	Yorkshire.
Wareham	Dorsetshire.	North Allerton	Ditto.
Lyme Regis	Ditto.	Great Grimsby	Lincolshire.
Shaftesbury	Ditto.	Clitheroe	Lancashire.
Midhurst	Sussex.	Morpeth	Northumbrel.
Horsham	Ditto.	Wallingford	Berkshire.
Arundel	Ditto.	Woodstock	Oxfordshire.

LIST of the NEW BOROUGHS to return TWO MEMBERS each to PARLIAMENT.

Boroughs.	Counties.	Boroughs.	Counties.
Manchester	Lancashire.	Devonport	Devonshire.
Bolton	Ditto.	Wolverhampton	Staffordshire.
Blackburn	Ditto.	Stoke-upon-Trent	Ditto.
Oldham	Ditto.	Tower Hamlets	Middlesex.
Birmingham	Warwicksh.	Finsbury	Ditto.
Leeds	Yorkshire.	Mary-le-bonne	Ditto.
Halifax	Ditto.	Lambeth	Surrey.
Sheffield	Ditto.	Macclesfield	Cheshire.
Bradford	Ditto.	Stockport	Ditto.
Sunderland	Durham.	Strond	Gloucestersh.

LIST of NE BOROUGHs to return ONE MEMBER each to PARLIAMENT.

Boroughs.	Counties.	Boroughs.	Counties.
Ashton under-Lyne	Laneashire.	Gateshead	Daubent.
Bury	Ditto.	South Shields	Ditto.
Rochdale	Ditto.	Huddersfield	Yorkshire.
Warrington	Ditto.	Wakefield	Ditto.
Salford	Ditto.	Whitby	Ditto.
Chatham	Kent.	Kendal	Westmoreld.
Cheltenham	Gloucestersh.	Tynemouth	Northumbrel.
Dudley	Worcestersh.	Walsh	Staffordshire.
Kidderminster	Ditto.	Whitchaven	Cumberland.
Fowne	Somersetsh.	Merthyr Tydvil	Glamorgansh

LIST of COUNTIES which are divided, and that send FOUR MEMBERS to PARLIAMENT.

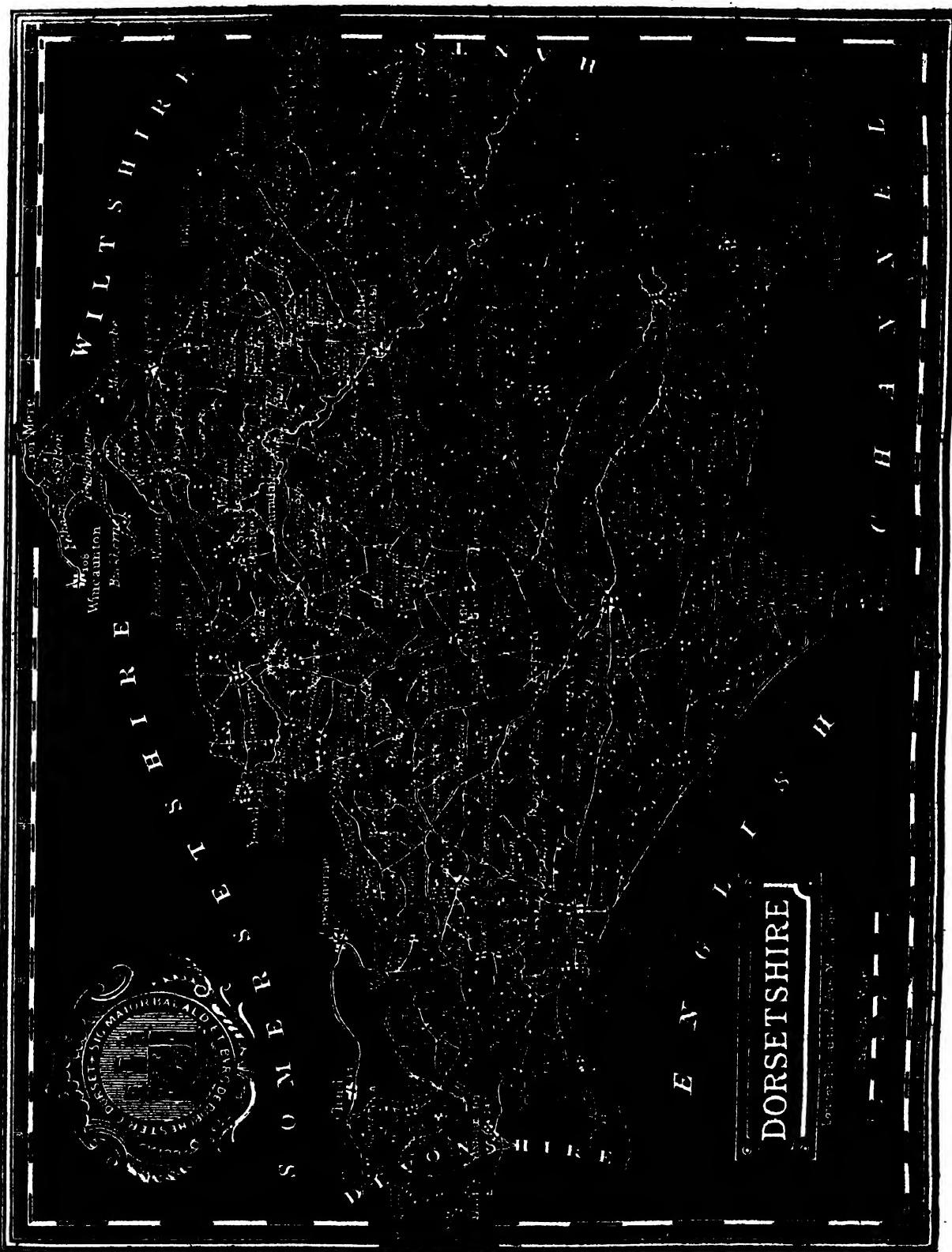
Cheshire.	Hampshire.	Somersetshire.
Cornwall.	Lancashire.	Staffordshire.
Cumberland.	Leicestershire.	Suffolk.
Derbyshire.	Lincolnshire.	Surrey.
Devonshire.	Norfolk.	Sussex.
Durham.	Northumberland.	Warwickshire.
Essex.	Nottinghamshire.	Wiltshire.
Gloucestershire.	Northamptonshire.	Worcestershire.
Kent.	Shropshire.	Yorkshire.

LIST of COUNTIES returning THREE MEMBERS each.

Berkshire.	Dorsetshire.	Hertfordshire.
Buckinghamshire.	Herefordshire.	Oxfordshire.
Cambridgeshire.		

LIST of WALES COUNTIES which formerly sent ONE, now send TWO MEMBERS to PARLIAMENT.

Caernarvonthenshire.	Denbighshire.	Glamorganshire.
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DORSETSHIRE.

DORSETSHIRE is a maritime county in the western circuit. It is bounded on the west by Devon, on the north by Wilts and Somerset, on the east by Hants, and on the south by the British Channel. It is about 50 miles in length, 36 in breadth, and 150 in circumference. Its form is very irregular. It is divided into 34 hundreds, and contains 300 parishes, and 18 market-towns. It lies in the province of Canterbury, and the diocese of Bristol.

This is one of the pleasantest counties in England, and the soil is rich and fertile. The air is in general healthy; a little sharp on the hills, but mild and pleasant in the valleys, and on the coast. The northern part, which is divided by a range of hills from the southern, was formerly overspread with forests, but now affords excellent pasture for cattle; whereas the southern part, which consists chiefly of fine downs, feeds an incredible number of sheep; while port towns furnish an abundance of fish. This county also noted for its manufactures of flax and hemp, of which there are large quantities grown, particularly about the village of Bradip, and towards Beaminster. The Dorset sheep are highly esteemed for their mutton, and also for the fineness, shortness, and close texture of their wool, which is much used in the manufacture of broadcloth. The greatest proportion of the land of this county is appropriated to pasture—the arable is estimated at about *one-third*, and the waste at about *one-ninth*.

The chief rivers are the *Stour* and the *Frome*. The *Stour* rises in Somersetshire, and passes by Sturminster and Blandford, and falls into the English Channel at Christchurch. The *Frome* flows by Dorchester, and falls into Poole Harbour, near Wareham.

Its chief towns are, Dorchester, Blandford, Weymouth, Bridport, Beaminster, Corfe Castle, Poole, Lyne Regis, Shaftesbury, Sherborne, Wimborne, Wareham, Cranbourne, Sturminster, and Melcombe Regis.

DORCHESTER, the county town, consists principally of three spacious streets, which join each other about the middle, and are well paved, neat, and clean. The immediate vicinity of the town is surrounded with agreeable walks, planted with rows of trees; and the surrounding country, for the most part, is level and fruitful. This town is very ancient, as it was occupied by the Romans, for we find it mentioned in the Itinerary of ANTONIUS, under the name of *Durnoraria*; and by PTOLEMY, by that of *Durnium*. It suffered greatly in the Danish wars, and also by fire, which, in 1613, destroyed property exceeding in value 200,000*l.* Near Dorchester is the small village of *Kingston Russell*, noted as being the native place of JOHN RUSSELL, the first *Earl of Bedford*. He was first introduced at court in 1498, by PHILIP, Archduke of Austria, who had been compelled by distress of weather to put into Weymouth, and upon which occasion he had been highly entertained with the company and conversation of Mr. RIVELLI. He was raised to the peerage by HENRY VIII., in 1539.

LYME REGIS, about 250 years ago, was so inconsiderable a place, that it was visited only by a few fishermen, but it is now become a place of great trade, and is much resorted to for sea-bathing. In 1635, the Duke of Monmouth landed here on his ill-judged design against James II., which terminated in his own destruction, with that of many others.

WEYMOUTH, a considerable town, is situated at the bottom of a semicircular bay of more than two miles in extent, and is a well-frequented port defended by the two

castles of *Sandford* and *Portland*. It is 8 miles from Dorchester, and 128 from London.

BLANDFORD, a neat and thriving town, is beautifully situated on the river *Stour*. This town has given birth to several very eminent characters, among whom were W. WAKE, archbishop of Canterbury, and CHRISTOPHER Pitt, one of the most eminent poets of his time. Pitt was born in 1699, and died in 1748. About a mile from this place, is the small village of BLANDFORD ST. MARY, noted as the birth-place of the celebrated antiquary BROWN WILLIS, whose chief work is his "*History of Cathedrals*." Blandford is 10 miles from Shaftesbury, 9 from Wimborne, 15 from Poole, 16 from Dorchester, and 103 from London.

SHERBORNE is a town of some note, and of very considerable antiquity, having been erected into a bishopric by INA, king of the *West Saxons*, in the year 704. The celebrated ASHER MENEVENSIS, who wrote the life of ALFRED THE GREAT, and assisted that king in his literary pursuits, was a bishop of Sherborne. The bishopric of Sherborne continued till the time of William the Conqueror, who removed the see to *Old Sarum*, now Salisbury. Its greatest ornament is its magnificent church. It is also noted for its castle, which was built by ROGER, the third bishop of Salisbury, when this county was part of that diocese. This castle was the first that was formerly besieged in the civil wars between KING CHARLES I. and his Parliament, and it was the last that held out for the King. In its church are interred the Saxon kings *Edward*, *Ethelbald*, and *Ethelbert*. CRESCU, an eminent poet, was born here in 1659; and GOADLEY, a noted bookseller and author, was also a native. Sherborne is 116 miles from London.

WIMBORNE, sometimes written *Wimbourne-Minster*, is situated between the rivers *Stour* and *Allen*. It formerly had a monastery, in which were interred the West Saxon Kings *Ethelred* and *Sigeforth*, and Queen *Ethelburga*. It has a noble church, in which is a monument of SIR ANTHONY

ILEY, Bart., who first brought cabbages into England from Holland, in 1628. Wimborne is also noted as the birth-place of the celebrated poet MATTHEW PRIOR, whose father was merely a joiner. Upon the death of his father he came to London, and was sent to school by his uncle, who was a vintner. He was one of the principal secretaries of state in the reign of KING WILLIAM, and was sent by the Queen to France as ambassador, in 1711. Of this place also was ANTHONY ASHLEY COOPER, first Earl of Shaftesbury, one of the most distinguished statesmen of the 17th century, who was born here in 1621. He was a member of the celebrated *Cabal Ministry*, in which, from his superior talents, and forcible eloquence, he took a decisive lead.

The denomination *Cabal* is given in allusion to the initial letters of the full names:—*Clifford, Ashley, Buckingham, Arlington, and Lauderdale*, whose counsels directed the whole, and who were certainly men of great abilities, but destitute of either public or private virtue. (Russell.)

Wimborne is distant from London, by way of Salisbury, 103 miles, by Winchester, 101 miles.

POOLE, one of the most considerable towns in the west of England, carries on a very extensive trade with the West Indies, Newfoundland, and France. Its merchants also trade to the Baltic, Norway, and Greenland. Poole is distant from London 107 miles, and from Winchester 40.

BRIDPORT is noted for its growth of hemp, and for its manufacture of sail-cloths, ropes, and cables.

CRANBOURNE is rendered famous for being the birthplace of STILLINGFELT, bishop of Worcester, who was

born here in 1635. Bridport is 134 miles from London Cranbourne is 92 miles from London.

SHAFTESBURY, situated at the northern extremity of the county, upon a very high hill, is a place of great antiquity. According to tradition, it existed long before the Roman invasion. King Canute, the Dane, died here in 1035, and was buried at Winchester; and the Rev. JAMES GRANGER, author of the celebrated *Biographical History of England*, was born here. He was the son of a steel-cutter. When a little boy, he often carried out the monthly publications for a Mr. Wooldridge, bookseller; as a reward for his trouble, his request was the loan of the *Gentleman's Magazine*, and one penny to purchase a candle to read by it. In ancient times it was much resorted to, and derived its celebrity from its rich monastery, which was founded here as early as the time of ALFRED THE GREAT by whom this town was greatly enlarged, and chiefly rebuilt. Formerly, there were no less than 12 churches, but now only three. It is distant from London 101 miles.

WAREHAM, near the mouth of the river Frome, is very ancient, and was at one period large and populous, but is now fallen into decay. It formerly contained 17 churches, but now only 3, and one of these only is used for public service, being all consolidated. Its harbour was formerly much noted, but owing to the shallowness of the water, and the retreat of the sea, is nearly choked up. BIATRIC, the last of the West Saxon kings, is interred here. It is also noted as the birth-place of HORACE WALPOLE, earl of Orford, a polite writer, who was born here in 1717. It is 115 miles from London.

About four miles from Wareham is the Isle of Purbeck, near the centre of which is *Corfe Castle*, which is said to have been built by King EDWARD, but is now in ruins. The first mention of this castle in history is in the year 978, upon the occasion of the barbarous murder of EDWARD, king of the West Saxons, by his mother ELFRIEDA. This castle, at one time, was the strongest in the kingdom.

CERNE ABBAS, a small town, 7 miles from Dorchester, is remarkable for the remains of its abbey, founded by St. Augustine.

BERE REGIS, a small village, about 8 miles from Blandford, has been rendered famous from its having been a royal demesne. Queen Elfrieda had a seat here, to which she retired immediately after the murder of her son-in-law EDWARD THE MARTYR.

About 4 miles from Shaftesbury, near Gillingham, is the small village of PENCILLWOOD, in Somersetshire, which is noted as being the place where King Alfred went into the Danish camp, disguised as a minstrel; in commemoration of which a tower has been erected, 120 feet high, by one of the ancestors of the present Sir RICHARD COLT HOARE, Baronet.

Population of its principal Towns.

Blandford	3,109
Bridport, and parish	4,242
Cranbourne, and parish	2,158
Dorchester.....	3,033
Lyme Regis, and parish	2,621
Poole	6,459
Shaftesbury	3,061
Sherborne, and parish.....	4,075
Sturminster, and parish	1,831
Wareham.....	2,325
Weymouth and Melcombe Regis	7,655
Wimborne, and parish	4,009

This county sends 13 members to Parliament; viz. 3 for

the county, 2 for Dorchester, 1 for Lyme Regis (formerly 2), 2 for Poole, 1 for Shaftesbury (formerly 2), 1 for Bridport, 1 for Wareham (formerly 2), and 2 for Weymouth and Melcombe Regis (formerly 4).



THE STAG OR HART

The above engraving represents the STAG, an animal that seems designed by the CREATOR to embellish the forest and animate the solitudes of uncultivated nature. Though possessed of horns that might be used offensively, he is still a very innocent animal, and never uses them but in his own defence.

The HIND, the female of the Stag, is less than the male and her head is not adorned with horns. She is exceedingly attached to her young. The Stag is one of those animals that are the most tormented in the chase; the refined barbarity of hunting him, and tearing him to pieces by dogs, is a pleasure which the great princes and sovereigns have reserved for themselves. The Stag is about five years in coming to his full perfection, and usually lives to the age of from thirty to forty. It is a generally received opinion among naturalists, that animals live seven times the number of years required to bring them to perfection; but whether this opinion be sufficiently confirmed by experience, appears somewhat problematical. During the reigns of our first Norman kings, the passion for hunting the Stag was carried to such excess, that it was considered as great a crime to destroy one of these animals, as to murder one of the human species. At this period, large tracts of land were converted into forests for deer, but happily for mankind, those wide-extended scenes of desolation and oppression, have been gradually contracted; agriculture has spread itself over the land; beasts of the chase have given way to the ox and the sheep, and lowing herds and bleating flocks enliven the face of the country, and increase the national wealth.

The FALLOW DEER is smaller than the STAG, and its horns are quite of a different shape; being flat, broad, and very slender, with fingers curiously disposed. It is seldom found wild in the forests, but constitutes the ornament of the park. The Roe produces every year one fawn, sometimes two, but seldom three; and they live to the age of about twenty years. They are very numerous in England, they are also numerous in France, but there are very few in Germany. The Roe, the Rein Deer, and the Elk, have all annual horns; they cast their horns later than the Stag, namely, in autumn; though they take nearly an equal interval to replace them.

Of the FALLOW DEER there are many varieties. In England we have two sorts, the *spotted* and the *brown*; the former is supposed to have been brought from Bengal, the latter, from Norway, by King JAMES I. The deer, in its different varieties, is a race of animals extensively diffused, and appears to spread over almost every part of the globe.

The REIN DEER, an animal of the same genus with the preceding, is only found in the most northern parts of *Europe, Asia, and America*; namely, in Lapland, Greenland, and Canada; indeed, only where the cold is immense, and where the winter continues for about three-fourths of the year. In short, it cannot exist in a warmer climate. In its native climate it lives about twenty years, and chiefly upon moss. In Lapland, the Rein Deer supplies the place of all other animals, and constitutes the sole riches of the people; and furnishes them with food and clothing, and also supplies all their wants and comforts.

The ELK may be considered as making a near approach to the Rein Deer, but is larger, and as high as a horse; though it is not a native of the same cold regions, but is found in warmer climates, as in India, Africa, and in South America, and more particularly in Russia, and in other countries of the North. Like the Rein Deer, he may be tamed, yoked to a sledge, and will travel 200 miles in day.



THE CONDOR.

Of all the flying birds, the CONDOR of South America is by far the largest, being from nine to eighteen feet from the tip of one wing to that of the other. Indeed, for size and strength, combined with rapidity of flight, no bird can be placed in competition with it. The Condor possesses, in a much higher degree than the Eagle, all the qualities that render it formidable, not only to the feathered kind, but to beasts, and even to mankind.

The goodness of the Creator is evidently discerned that plentiful provision which he has made of creatures beneficial to the human race; nor are the footstep of His gracious wisdom less manifest in the care which He has taken to prevent the overspreading increase of such as are pernicious and destructive. A more remarkable proof of which we cannot have than in the wonderful bird before us; which, happily for mankind, is rare, and seldom found; for, were the increase of the species large, it would spread universal havoc and devastation. The CONDOR is a native of South America. The above engraving represents this extraordinary bird. These birds usually make their nests among inaccessible rocks, and are very destructive to sheep. One of these birds has been recently imported to England, and may be seen in the Zoological Gardens in the Regent's Park.



BEES.

AMONG all the different classes of winged insects, the most beneficial to man, and one of the most wonderful, are BEES. Bees are common in most countries; but, although naturalists have for ages considered them as an important subject of inquiry, their history as yet is but imperfectly known. In some countries, Bees are an object of great attention, and their honey and wax are considerable articles of commerce.

In every hive, Bees are of three kinds; viz. 1st, the working bees, or mules; 2d, *males*, or *drones*, which are less numerous; and, 3d, the *female bee*, which is called the *mother*, or *queen*. The workers are the smallest, the males the largest, and the females are of the middle size. The males are nearly double the size of the workers, but want stings. The females, or queens, have a sting, and are longer than the males, or the workers; in other respects they are exactly like them.

Bees usually collect together in hives. A hive generally contains from fifteen to twenty thousand; in others, from thirty to sixty thousand. In all these there is but one *queen mother*, or female; and the number of males does not exceed two or three hundred; the remainder is composed of working Bees, which labour for the others, to support them. Neither the males nor females go abroad in quest of wax or honey. All the working bees are furnished with a rump for their labours, and a sting for their defence.

These little animals, whom we behold so sociable in their community, are ever industrious to assist each other, and prevent their mutual necessities with surprising generosity; and shall we leave our fellow-creatures in distress? On the contrary, we are convinced, that the finest of all pleasures consists in preserving persons from calamity, and it is a pleasure capable of increasing in proportion to our abilities to give.

The Bees, when they begin to form the different cells in the hive, commence at the top, where they lay a bed of glue, to which they fix the first cells of the comb, which they continue downwards, till they have no room left. The comb they divide into three cantons: one where they rear their young; another where they store their wax, for their future occasions; and the third, where they preserve their honey for the winter. The wax is a provision altogether as necessary for the Bees, in one sense, as the honey, for it is with the wax they build their apartments, and also where they treasure up their honey. A bee is first an egg; this egg, which in time becomes a bee, is exceedingly white. The eggs of bees are cast into the empty cells, not carelessly into any cells, but only the middle cells, which are always appointed for the breeding cells, whilst those all round the hive are reserved for the honey.

COSMOLOGIA,
OR OBSERVATIONS ON NATURE, &c.
(Continued from page 294.)

THE ATMOSPHERE.

This is described as a thin, invisible, elastic fluid, surrounding the earth, and extending to the height of fifty miles from its surface; it is the medium or element in which we live and breathe, and consequently contains the principles of life, and constitutes the power of vegetation. The specific gravity of air is about 850 times less than that of water, so that one gallon of air will weigh a little less than $\frac{1}{2}$ of an ounce. This air we are constantly inhaling by the action of the lungs, which air expanding by the vital heat is expelled, and the vacuum supplied by a fresh inhalation. It is therefore evident, that air too much rarified is not proper to sustain animal existence, and that air too much condensed is alike unsuited for that purpose; therefore any effluvia raised or imbibed that tends to impregnate the air with vapours, or atoms of a strange or unusual kind, even though odoriferous and agreeable to the scent, is unwholesome; plants as well as animals will decline under the influence of vitiated air. The whole expanse filled with the fluid called air, or what we denominate the atmosphere, is the region or reservoir of the winds, those winds being the floating streams that run in currents from the surcharged, towards the exhausted, parts of the spacious void. Wherever the air becomes rarified, or the moisture of its composition diminished, to that part will it rush, with a force equal to the weight by which it is impelled; and that weight will be in exact proportion to the preponderancy of the circumambient element over the specific gravity of the space rarified. Heat, as has just been observed, is the cause of this phenomenon, for, in fact, heat engenders motion, and motion excites heat, so that there reciprocity of influence, of which we shall treat in a subsequent part of these observations.

The component parts of air, or the atmosphere, cannot be positively defined, because we cannot describe that which is invisible; we discover fire and water as the chief ingredients, but what other elements of nature more subtle than fire may exist we do not know; the electric fluid, though acting on combustible bodies, is perhaps only the agent that provokes the flame, and carries with it or collects the fire that invests the surrounding space; but there is a magnetic quality in the electric fluid, that indicates something of a nature yet unobserved; there may be a distinct element in this irresistible force of motion. Fire will not naturally adhere to indurated bodies, it requires violent and continued motion to infuse its particles, and to make it separate the atoms of iron; but lightning instantly decomposes that substance, and reduces it to a state of *fusion*. It seems likely from this experimental process, that an element more penetrating and keener than fire pervades the universe, and another still or *ad infinitum*.

Air is indestructible; that is, you cannot change its nature, it will still be air under whatever process you may place it, you cannot make it anything else; but its quality may alter, and is subject to perpetual changes, such as *hot*, *cold*, *moist*, and *dry*; these are variations, but only in the effect that it produces, according to circumstances, for it loses nothing of its substance, nor transforms into other element. This peculiarity also excludes the possibility of analysis, or division of its parts.

The elasticity of the air, which gives it transparency, is that quality which enables us to see objects distinctly; the

light passes through it to the organs of sight, and penetrating to the optic nerve, pictures the form of substances by reflection upon the visual tablet. Again, the atmosphere is most admirably adapted to sustain our existence by the power it possesses of purification, and the exact adaptation of its substance for animal respiration; were it more dense than it is, we should be in continual darkness; were it more thin and rarified, we could not breathe in it, but must soon expire.

Our atmosphere is the medium through which LIGHT is communicated to us, and had we no atmosphere, we should be unable to distinguish one object from another; for a flood of light would inevitably destroy the sight and deprive us of vision, just as by fixing our eyes on a full-shining sun, we shall for a moment after be unable to see anything distinctly. LIGHT is transmitted through the atmosphere in a broken or undulating course; it enters the surrounding medium through which we view it in a direct course, but becomes bent in the descent, by which a luminous body will appear higher than it really is above the horizon: this peculiarity may be exemplified by putting a straight stick into water in a slanting direction, the end that is immersed will seem crooked, and appear higher than it actually is, because the rays of light are conveyed into the water in the same refrangible manner as they pass through the atmosphere. Planets and comets are luminous through the atmospheres that surround them, whether the light they emit be primary or reflected. LIGHT is not a substance, but an effect of some influence that operates on the elastic element called ether, and can neither be produced nor reflected without the medium on which it has to act; neither is SOUND a substance, but the effect of a concussion on the ATMOSPHERE; for the blow of a hammer in an exhausted receiver will make no sound, nor could either light or sound find a conductor to the eye or the ear without an atmosphere; yet, the atmosphere is not light nor sound, but it is the medium of both: that is, the element by which we are made sensible of both, and through which we realize their benefits. It becomes worthy of inquiry how these effects are produced and manifested to our senses by the atmosphere; and first of sound.

(To be continued.)

OF THE
BUILDINGS AND CITIES OF VARIOUS NATIONS.

SECTION I

(Continued from page 311.)

In most of the cities of Europe, the houses are built, as they are in the cities and even in the villages of England, of stone or brick; but in Russia, Sweden, Denmark, and Norway, they are built of wood. On the continent, as if the extreme narrowness of the streets were not sufficiently inimical to health, comfort, and convenience, the houses are built of a most inconvenient and unnecessary loftiness; few of them being less than five, and many of them as many as ten stories high! The same remark applies to Edinburgh, as far as relates to the Old Town; but in the new erections of that city, the houses have been more judiciously adapted to the health, safety, comfort, and convenience, of the inhabitants.

The continental cities present to the eye of the traveller the most abrupt and incongruous mal-associations, a splendid and extensive palace being, not unfrequently, sur-

rounded and deformed by a collection of miserable and tottering huts.

In countries which profess the Roman Catholic religion, there are usually a very great variety of churches and convents, which greatly serve to the architectural beauty of the cities. The streets, too, are frequently adorned with exquisitely executed images, or statues of the various saints. And however much we may, and do, lament that a considerable portion of Europe is still plunged in what we are taught and bound to believe an unmeaning or offensive superstition, it must be confessed that a more sublime sight can scarcely be imagined than is presented to him who sees the devotees kneeling before these images openly, and so abstracted in prayer, too frequently we fear erroneous, as not to be disturbed by the constant rush and hum of the busy multitude, and even to be wholly unconscious of its existence.

From the causes which we have named or alluded to, the continental cities possess much of architectural grandeur and sublimity. The great and wealthy cities of the south of Europe have, in addition to these causes, another grand source of architectural eminence and beauty. We allude to their perpetual playing fountains. The extreme heat of these cities demand a great and perpetual supply of water. This is secured by means of aqueducts, and these supply the beautiful and principal, as well as useful, fountains which are erected in the squares and the public places of the cities.

Even in our own exceedingly temperate climate, we well know how valuable and indispensable an article water is ; and few are so insensible or so careless as not to derive a soft and soothing pleasure from observing the placid flow of an inland river, and from listening to the musical and regular murmur of a little brook. How much more delightful ther must it be to the dense population of a crowded city, whose confined situation increases the naturally oppressive heat o the climate, to witness the perpetual play of the waters,

" Whose

Crystal streams from marble fountains burst,
Leap into life, and, sparkling, woo the thirst ! "—BYRON.

Water, however presented, must, to a population thus situated, be a delightful and an agreeable spectacle. But the architects of these countries have wisely availed themselves of the means thus offered to them to perpetuate their fame, and to render the natural taste of the people for one kind of beauty, the means of producing in them an attachment to the principles, and a love and perception of the beauties, of the noble art of architecture.

Most of the large cities of Europe are either actually sea-ports, or seated upon large and navigable rivers, which lead directly to the sea. When built in the neighbourhood of a river, portions of a city are usually built upon the opposite banks of the river, and connected by means of a bridge. Such is the case with London, which has fine noble bridges connecting the opposite banks of the river; viz, London-bridge, Southwark-bridge, Blackfriars-bridge, Waterloo-bridge, and Westminster-bridge. They are all of stone, excepting the Southwark-bridge, which is built of cast iron. The superior strength and tenacity of this material have enabled the architect to throw three wide and beautiful arches across the noble Thames; and for lightness and elegance of structure, combined with strength of material, it is, perhaps, scarcely possible to surpass this bridge. Of the other four bridges, Waterloo-bridge and London-bridge are decidedly the most beautiful and the most substantial.

The other cities of Europe, which, like London, are situated on the opposite banks of a river, are, Petersburgh, Moscow, Vienna, Berlin, Amsterdam, Berne, Dresden, Florence, Paris, and Dublin.

The cities of Europe which lie on the banks of the Mediterranean are built upon a gentle upward sweep from the sea ; and a person sailing past them views the various streets, churches, and palaces, rising distinctly and beautifully above each other, like the seats of an ancient amphitheatre. Some of the sea-ports of Barbary and Western Asia are similarly built ; and as the walls and fronts of their houses are almost uniformly whitened, the scene is peculiarly pleasant and picturesque.

But though this disposition of the buildings of a city has a very pleasing appearance, it is, in reality, very disadvantageous in times of war. This was fully proved on the bombardment of Algiers by the English fleet under the command of Admiral Lord Exmouth. The city presented so fair a mark for our cannon, that every shot told with a fatal and destructive precision ; and the Dey had the pain to see two-thirds of the city laid in utter ruins, and the inhabitants slaughtered by thousands. Improved fortifications might probably diminish the evil, but nothing can suffice to remove it altogether.

TASTE.

MANY persons imagine that taste is a thing for which no standard can be found ; and that every man may have his own peculiar taste, without violating any fixed rule. This opinion might be rational enough, if taste were only what Epicures would make it ; for then indeed, being sensual, it would have nothing to guide it but the palate of the mouth ; but there is a certain taste in everything we do or say, and which cannot be true taste, unless it be adapted to some general rule. In conversation, there is something that makes one person more agreeable than another ; and every one knows how differently a story will be received according to the way in which it shall be told : in one instance, want of arrangement, which is want of taste, may spoil the jest ; while in another, a less facetious narrative will excite the liveliest mirth because it is tastefully told. In the definition of taste, we must avoid the mistake of substituting fancy in its place : fancies may be as various as faces, and unaccountable as any of the other whims of folly or fantasticality ; but taste is not allied to whims and fancies, for they are as inimical as they are opposite to each other ; fancy is changeable, but true taste is always the same, and exists in the perceptions of the mind. It is not difficult to define what is good taste, so far as good breeding and good manners are concerned ; for no man of common sense can be ignorant of the fact, that to introduce anything unsensibly, or interrupt conversation, is a manifest proof of a want of taste. Oaths, and asseverations, and bawling to be heard, while another is speaking, are striking instances of the absence of taste. But this qualification assumes a higher attitude. Taste is an arbiter in the arts and sciences, and designates the claims of literature ; it is the test by which criticism tries the quality of a writer's genius, and detects the ingredients of his compositions : if the critic have it not, he is a serpent without a sting, writhing and twisting, only to become an object of derision. Persons who read poetry, often do so without taste, and therefore without satisfaction ; they admire the musical *rythmus*, are pleased with the ingle of words ; it is all mighty pretty ; but as to the ideas, the sentiment, or moral, they have no notion whatever. Taste is therefore a source of gratification and pleasure to those who have it, since it draws out beauties and perfections to observation that are never beheld by superficial inquirers. Arguments have been advanced to prove that taste is variable, on the ground that what one age approved,

another has condemned and despised ; and they instance theatrical representations, some of which were so indelicate as to be now entirely disused, and even disallowed ; but this only shows that superior refinement approaches nearer to the perfection of taste ; and that without virtue, and purity of sentiment, no true taste can exist, any more than wholesome food can be relished by a diseased constitution, or a depraved appetite. The toleration of indecency, and the encouragement of rudeness, do not spring out of taste : they rather show the absence of everything connected with taste. No true taste can be found where the mind is void of sublimity, and there cannot be sublimity of mind where either vicious or trifling ideas engross the imaginations of the heart. Why will an ignorant clown pass heedlessly by a fabric like St. Paul's Church, without particular notice, while a gaudy equipage and liveries transfix him in gaping and motionless wonder ? his ideas are tasteless, he feasts his eyes, that cannot be filled with seeing, while his vacant mind has no taste for the sublimity and magnificence of the noble architectural edifice ; its portico and a pig-sty are about the same to him, if indeed he do not prefer the latter : the man of taste views things through another medium, and contemplates the various ornaments and beauties of the work with all the associations of its use, purposes, and origin. He examines its exterior grandeur, he traverses its area within, reflects on the destiny of man, while he surveys the monuments of the illustrious dead ; and above all, he lifts his thoughts to Him for whose honour and worship, by human labour and ingenuity, the sacred pile was piously erected ; he observes its dome and the elevated cross, listed like a banner of protection in the name of a Saviour, conspicuously over the greatest city of the world : in this there is taste, and that taste is founded upon the only basis by which it can be supported.

Classical taste, though it may differ in degree, does not differ in the aggregate ; and the real standard of taste in this respect, will be found in the perpetuation of that reputation which works of genius have acquired, and still retain. Homer, Virgil, &c., will never lose their attractions ; Milton, Thomson, &c., will be immortal names, while many others, once brilliant in the eyes of temporary admirers, are sunk or sinking into oblivion : the want of chasteness, or the absence of sublimity, has caused them to evaporate with the breath that puffed them into notice.

One man prefers the *Iliad*, another the *Aeneid* ; one is delighted with *Paradise Lost*, another glows with sympathetic ardour at the picturesque scenes of the *Seasons* ; yet both have taste : the difference is not destructive of the principle, it is merely a preference ; the amateur in architecture may admire the modern, while at the same time he is an enthusiast in favour of the Gothic ; he has an equal taste for both, but his love of the antique draws his attention to the latter.

The able artist is not dazzled by a glare of colouring, he scrutinizes the lights, shades, and proportions of the picture, and pronounces its character according to a standard of true taste.

The more a person improves in general knowledge, the more will that person be able to exercise a true taste ; for taste is discernment, purified by refined sentiment, and enlightened by a cultivated understanding.

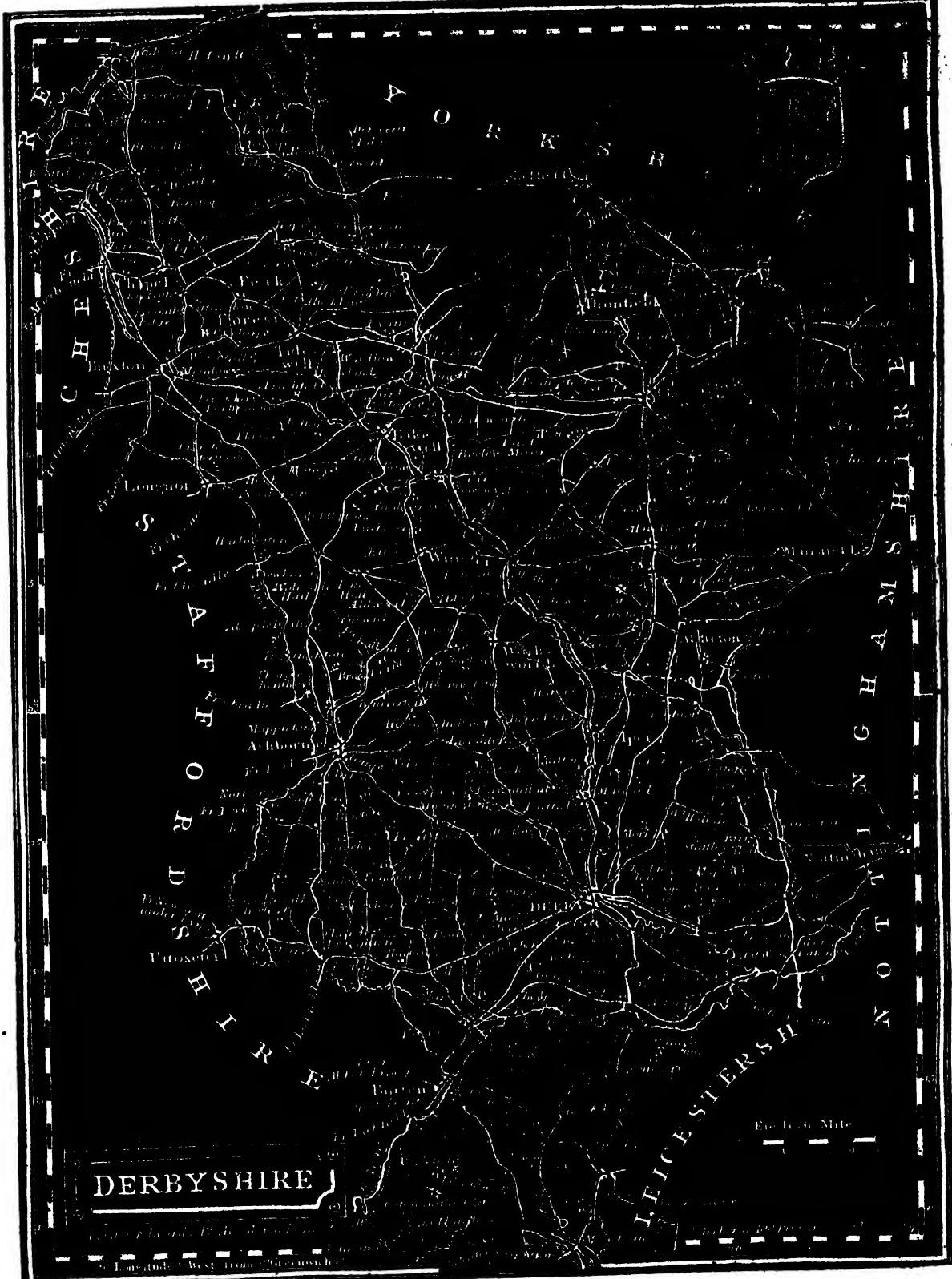
THE FOX.

THE Fox is found in most countries, and is very common in England. He is sly and artful and full of stratagems,

and all the keepers of poultry are well acquainted with him from the numerous depredations he commits on the hen-roost. The fox is about the size of a middling shepherd's dog, and of a red colour, with a long bushy tail. He usually lives in holes of the earth, but he seldom troubles himself in digging them, but rather dialogues some badger or rabbit, and then it costs him but little to model it to his own taste. The female brings forth from four to six young yearly, which she suckles a fortnight ; after which the male feeds them with pigeons, hens, cheese, and other provisions of a similar kind, till such time as they shall be strong enough to follow him to the chase, and to learn, under him, the grand art of knavery. Thus, he always makes choice of his abode near villages, whence he may hear the crowing of cocks, and the clucking of hens, and already feast on them in idea, whilst he watches the favourable moment for making them his prey. He plays his tricks only at night, and conducts himself on the march with all the prudence, circumspection, and vigilance, of the most experienced marauder. He first goes upon the discovery, and informs himself of the country he wants to lay under contribution, visiting the hamlets and neighbouring villages, as also the farm-houses at a distance, with all their nooks, corners, and environs on his route : he takes care to note the houses where poultry are kept, such as are guarded by dogs, as also those he can penetrate, either by leaping over hedges, walls, partitions, gates, or by making his way through them, or under them ; and, lastly, the strongest retreats that may serve him in case of pursuit. After having properly ascertained everything, he loses no time, but commences his expedition ; he clears a wall, or digs a passage for himself underneath, enters the court-yard, runs to the poultry-house, kills at a single hearty bite everything that offers, hens, cocks, geese ; then, instead of feasting himself with delicate morsels on the spot, he begins to carry off a bird or two if he can ; gets and conceals them in some distant corner that he has observed before, returns for another, then hides it ; makes a third and a fourth journey, till such time as he has carried all away, and safely secreted. In this way he collects, in a single night, provisions for several days ; but he does not continue idle on that account, waiting till they shall be consumed ; he goes upon new discoveries in the night, and plans new resources for his future wants. He is also particularly fond of grapes and honey, and will procure



hem wherever he can. Hunting the fox is a very healthful exercise, and constitutes one of the favourite diversions of the gentlemen of this kingdom. There is, perhaps, no part of the world where it is pursued with equal ardour and intrepidity. Both our dogs and our horses, for this kind of chase, are superior to those of every other country in the world. The moment that a fox finds himself pursued, he flies towards one of his holes ; but these being always stopped up before the chase begins, he sees no other resource than his speed and his cunning. He does not double like a hare, but continues his course straight forward, with great vigour and perseverance ; when a constant chase is frequently kept up for seven or eight hours together. The fox usually lives about twenty years.



DERBYSHIRE

Fig. 106. MILE

Longitude West from Greenwich
Latitude North from the Equator

DERBYSHIRE.

DERBYSHIRE, an inland county, is bounded on the north by Yorkshire, on the east by Nottinghamshire, and on the south and south-east by Leicestershire and a part of Warwickshire. It is 56 miles in length, 34 in breadth, and 130 in circumference. It is divided into six hundreds, and contains 116 parishes, and 10 market-towns. It lies in the province of Canterbury, and diocese of Lichfield and Coventry.

Its principal rivers are, the *Derwent*, *Dove*, *Erwash*, and *Trent*. The *Derwent* and *Dove* both rise in the Peak. The general appearance of the country is very dissimilar; the northern part is mountainous and barren, subject to rains, and the air sharp and cold. The south and east parts are the most fertile, producing all sorts of grain in abundance. The bleak mountains of the Peak abound in iron, lead, antimony, marble, and alabaster, also in a coarse sort of crystal, and green and white vitriol. Its chief manufactures are, woollen cloth, hosiery, cotton, and iron. The silk and spar manufactures are, for the most part, confined to the town of Derby.

Its towns are, *Derby*, *Ashborn*, *Alfreton*, *Bakewell*, *Chapel-in-the-Prith*, *Chesterfield*, *Dronfield*, *Tideswell*, and *Wirksworth*.

Derby, the county town, is situated in a fertile valley, on the west bank of the river *Derwent*, over which it has a handsome stone bridge of three arches. It is generally considered a place of great antiquity, and is supposed to have been a town of some importance in the time of the *Romans*, who had made it one of their stations; for, as the historians have remarked, these stations were commonly fixed in the vicinity of some large town. The town is of a considerable size, handsome, and well built; and the streets are spacious, well paved, and clean. The chief public buildings in Derby are, the Assembly-room, the Guildhall, the County-hall, the County-jail, and the Theatre. The Assembly-room is a spacious and very elegant structure. The Guildhall is also a large and very handsome edifice. But among the public buildings, the Derbyshire General Infirmary claims peculiar distinction. This noble edifice, which is almost without a parallel among buildings erected for similar purposes, both for the elegant simplicity of its external appearance, and the admirable utility of its internal conveniences, was erected at an expense of 17,870*l*. It was opened for the patients in June, 1800. The mills of this place, established by the Messrs. Strutts, for the manufacture of silk and cotton, are particularly worthy of notice. The original one, formerly called the *Silk Mill*, by way of eminence, being the first and largest of its kind ever erected in England, stands on an island in the *Derwent*. Its history is remarkable, as it evinces the power of genius and the vast influence which even the enterprises of an individual may have on the commerce of a country. The *ITALIANS* had long been in the exclusive possession of the art of *silk-throwing*, when, about the year 1718, a young mechanician, named *JOHN LOMBE*, undertook the perilous task of visiting Italy, to procure drawings or models of the machines necessary for the undertaking. He remained there for some time, and obtained access to the silk-works, by corrupting two of the workmen, through whose assistance he inspected the machinery in private; and whatever parts he obtained a knowledge of in those clandestine visits, he recorded on paper before he slept. When his plan was just completed, his object was discovered, and he was compelled to seek the safety of his life by a precipitate flight into Eng-

land, where he arrived in safety, accompanied by the two *ITALIANS* who had favoured his scheme.

Fixing on Derby as a proper place for his design, he erected and established his mill on a small island in the *Derwent*, as above named, at an expense of 30,000*l*., which charge he enabled himself to defray, by the erection and employment of temporary machines, in the Town-hall, and other places, before the completion of his great work. This celebrated mill gives motion to upwards of 26,000 wheels, and nearly 98,000 movements. Every time the water-wheel goes round, no less than 76,720 yards of silk are wrought, which amounts to 318,504,960 yards in 24 hours. With this engine one workman can twist as much silk, and in a much better manner, than fifty can do without it. Of this complicated machine any single wheel or movement may be stopped without impeding the rest; and the whole is governed by one regulator. To secure the profits arising from his address and ingenuity, Mr. *LOMBE*, in 1718, procured a patent for 14 years; but before half the time of its expiration his life was brought to a close, by treachery and poison.

The *ITALIANS*, whose trade began rapidly to decrease, were exasperated to vengeance, and resolved on the destruction of the man whose ingenuity had thus turned the current of their business into another channel: this they accomplished through the machinations of an artful woman sent from Italy for that purpose. But though suspicion was strengthened into certainty, from the circumstances that transpired at her examination; yet the evidence being indecisive, she was discharged. The death of this lamented artist did not, however, prove fatal to his patriotic scheme; for the machinery was in full action, and the business became every day more successful. *JOHN LOMBE* was succeeded by his brother *WILLIAM*, who committed suicide, on which the property devolved to his cousin *THOMAS LOMBE*, afterwards *SIR THOMAS*. In consideration of this great improvement, the Parliament voted to *SIR T. LOMBE* the sum of 14,000*l*, with this condition, that an exact model should be taken of this machine, and be placed in the Tower of London, where it may now be seen. This town gave birth to that celebrated astronomer, *FLAMSTEAD*, and *MR. J. WRIGHT*, an excellent painter; as also to *HUTTON*, a famous antiquary, and *ROBERT CROWSHAW*, who, from a poor nailer, came up to London, almost penniless, but, by industry and integrity, left 4,000*l*. for charitable purposes, and died of the plague in 1625. *GEORGE FOX*, the founder of the "Society of Friends," was imprisoned at Derby for nearly a year; and here, in 1650, according to his journal, they first received the appellation by which they are now generally known. "JUSTICE BENNETT, of Derby," says he, "was the first that called us *Quakers*, because I bid him tremble at the name of the Lord." Derby was first made a royal borough in the reign of *EDWARD THE CONNIVER*, and was afterwards incorporated by a charter by *KING CHARLES I.* Here are 5 churches; that of All Saints deserves particular notice on account of its beautiful Gothic tower. Derby is 11 miles from Burton-upon-Trent, 18 miles from Nottingham, and 126 miles from London.

The next important town in this county is *CHESTERFIELD*, which has manufactures of various kinds, but the chief are those of iron, and shoes, and of cotton and woollen hose. This town is noted for a great battle fought here between *HENRY III.* and the *BARONS*, in which the latter were defeated. By the name *CHESTER*, it shows that it is a place of great antiquity. This town gave the title of *EARL* to *PHILIP DORMER STANHOPE*, whose "Letters to his Son" have been much celebrated. *CHESTERFIELD*

is 12 miles from *Sheffield*, *Mansfield*, and *Matlock*, 26 from Derby, and 151 from LONDON.

The other principal trading towns of this county are, *WIRKSWORTH* and *ASHBORN* on the Dove. The former is chiefly concerned in the lead trade, the latter is famous for its cattle market. Ashborn is 9 miles from Wirksworth, 13 from Derby, and 140 from London.

BAKEWELL, an ancient town, is seated on the *Peak*, near which are several large marble-works.

CHAPEL-IN-THE-FRITH, is also in the *Peak*, but very inconsiderable.

DRONFIELD, seated in a valley among the mountains, is remarkable for its salubrity, which has occasioned it to be made the place of residence of many respectable inhabitants, who attain to a great longevity.

TIDESWELL, a small town, is noted for its *WELL*, which ebbs and flows after a great rain, two or three times a day. This well is reckoned one of the wonders of the *Peak*.

REPTON, a small town, but formerly a large one, is noted as the burial-place of several of the *Mercian Kings*.

LITTLE CHESTER was anciently a city: and, in the time of the Romans, was a place of considerable importance.

BOLSOVER, about 5 miles from Chesterfield, is chiefly noted for its manufacture of superior tobacco-pipes.

CROMFORD (a large village), is greatly noted for its cotton manufactories, and owes its prosperity and its consequence to the genius and perseverance of the eminent Sir RICHARD ARKWRIGHT. In the hilly portions of Derbyshire there are some very valuable mineral waters, which have given rise to several flourishing towns, which are greatly resorted to by invalids and fashionables. The chief of these are, *Buxton*, *Matlock*, and *Kedleston*. Some of these springs are of very great efficacy.

The high *Peak* of Derbyshire abounds in natural wonders of the most beautiful description. Of all these, perhaps, the most remarkable is the crystallized cavern. For nearly a quarter of a mile the rocky aperture leading into this singularly beautiful place is so low in height, that persons of ordinary stature are obliged to stoop as they proceed. At the end of this distance is a wider and much loftier 4 for the county, and 2 for Derby.

part of the cavern, the sides and roof of which are nearly covered with crystallizations. A little farther on, the shape of the cavern again changes, and a part of it called the *Music-chamber* is entered. A more magnificent apartment all the wealth, taste, and skill of man would vainly endeavour to create. This apartment has its name from a collection of crystallizations, which exactly resemble the front of an organ. From the roof to the ground, in other parts of the *Music-chamber*, pillars of crystal, as geometrical in figure, and as angular in arrangement, as if placed there by the skill of the architect, seem to support the roof. Passing onwards, a still more beautiful apartment is entered. In this, the roof, from one end to the other, is studded with crystallized statues. The roof itself is dark, and the floor is partly of white, and partly of very dark spar.

When among the dependent crystallizations, a number of lighted candles, with which the guides always take care to be provided, are tastefully placed, the apartment seems in a living blaze of light; and the delighted visiter scarcely finds fault with the flattering title bestowed upon it.

Beyond this, there are several other crystallized apartments; but the access to them is somewhat tedious and difficult. And after having seen this apartment lighted up, as we have described, anything more that can be seen here will be viewed by the visiter with but little comparative interest.

The population of the principal Towns

Derby	19,648
Alfreton . . .	4,689
Ashborn . . .	4,708
Bakewell . . .	9,162
Bolsover . . .	1,355
Chesterfield .	9,190
Dronfield . . .	3,680
Tideswell . . .	2,666
Wirksworth . . .	7,315

Derbyshire sends 6 members to Parliament; namely, 4 for the county, and 2 for Derby.

THE DOG.



WATER SPANIEL.

Of all animals the Dog is among the most useful to man; and is equally remarkable for his docility, fidelity, and attachment to him. He evidently seems to have been designed by the Author of nature as an assistant and companion to the human species. Indeed, he assists man in the destruction of all animals that are hostile to his interests, and in conquer-

ing such as contribute to his support or pleasure. The flock not produced merely by the sudden collision or striking and the herd obey his voice; he conducts and guards them, together of two substances, for howsoever violent that might be, no sound would be heard, if the blow should be given in any place from which the air had been excluded after exhaustion; and by experiments, it has been ascertained, that a feather will descend as quickly as a piece of lead in *vacuo*; that is, where there is no air.

To illustrate the phenomena of sound, we must recall the reader to our preceding article on the atmosphere as above alluded to, by which it will be understood, that air is a fluid, and, consequently, subject, like every other fluid, to agitation and expansion: this can be exemplified by a visible fluid; for instance, water, which if troubled by any force, will vibrate and continue in motion for some time: suppose a stone to be let fall from a height into still water, the circling curls of its motion will extend to a considerable distance; and, if not interrupted, will recede from the centre where the stone falls, on all sides, equally distant from that centre. So also with the air, any stroke on which will send its undulating particles in floating circles, not only around, but also upwards and downwards, so far as is free from obstruction, or until weakened by expansion, in the distance of space. It dies away on the settling action of the yielding element, when the impulse by which it was set in motion ceases. When any obstruction stands in the way, the floating element returns to an extent equal to the force by which it strikes against the opposing body, somewhat in the manner of an eddy in the current of a stream that meets with a sudden impediment to its course. Such a repulse causes the air to rebound, and carrying back the substance and form of its original creation, strikes on the ear; with a repetition of the same sound, though weaker and less distinct; this effect is called *Echo*, about which many strange and sometimes fabulous stories have been related. Sometimes it will occur that intervening hills, ascending one above and beyond another, will return separate revulsions of sound, and consequently produce several *Echoes*, as if the *hills, woods and forests*, were in conversation with each other.* Both the original sound and its *Echo* travel at the same speed, about 1042 feet in one second of time, or nearly a mile in 4 $\frac{1}{2}$ seconds: by this rule, the distance of thunder, or of any piece of ordnance, may be calculated; counting from the flash to the report, the former being so instantaneous as not to require any consideration in the reckoning: likewise the space between the emission of sound and a returning *Echo* will, by the same estimate, determine the distance from the object that causes the *Echo*; observing that, as the sound must go and return, the distance will be just half; that is, 571 feet in one second of time; namely, in passing forward and returning. Sound, like a current, becomes stronger by narrowing its course, or collecting the element that conveys it; just as the rays of the sun by concentration become more intense than when diffused or spread in the atmosphere. If two semicircular recesses were made of solid materials, with their concavities diametrically opposite at 50 yards distance, and two persons placed back to back, one in each recess, with his face to the wall, they might converse in a whisper, because the motion of the atmosphere, by the concavities of the recesses, would be directed reciprocally towards each other; and if there were a continuity of enclosure between them, the effect would still go further: on this principle, the *whispering gallery* in St. Paul's now

Of the Dog there are many kinds; the principal are, the *Shepherd's Dog*, the *Cur Dog*, the *Greenland Dog*, the *Bull Dog*, the *Mastiff*, the *Dalmatian* or *Coach Dog*, the *Highland Greyhound*, the *American Greyhound*, the *Beagle*, the *Harrier*, the *Fox-hound*, the *English Setter*, the *Spanish Pointer*, the *Water Spaniel* (as represented in the engraving), the *Pug Dog*, the *Turnspit*, the *Rough Water Dog*, the *Newfoundland Dog*, and the *Bloodhound*.

The *SHEPHERD'S DOG* is generally considered as the parent stock of all the canine race. This faithful animal, ever attentive to his charge, reigns over the flock, and is of the utmost importance in many parts of the country, where extensive tracts of land are solely appropriated to the feeding of sheep and other cattle. Observe him following a flock of sheep; what vigilance, what attention, what fidelity! What order he preserves on their march, both in going to and returning from the pasture! Arrived at the ground, he is not a moment idle, he is constantly employed in collecting the sheep that stray, in keeping off wild beasts or other enemies that offer to come near; his voice frightens these or collects the flock better than that of the *SHEPHERD*, and in all his different attentions he never waits for orders; they seem to be natural to him, or he seems to have gotten his lesson by heart. And thus it is with the *House Dog*, whose employment is to guard persons and property. He keeps off everything that he suspects, or that he is not acquainted with. In short, the person of his master, his house, and everything that belongs to him, are sacred objects, which he will not suffer to be meddled with; and whoever or whatever shall attempt to approach, he drives away with the greatest bravery. And so it is on journeys, he suffers no one to injure his master, nor to come near his baggage, and watches carefully over every thing that belongs to him or is near him.

The *Greenland Dogs* have some resemblance to the *Shepherd's Dog*. The *Greenlanders* use them chiefly for drawing sledges, to which they yoke four, five, or six together. The dogs of *Kamschatka* are nearly of the same kind, and are also exceedingly useful in drawing sledges, the only mode of travelling in that country during the winter.

For a further account of the different kinds of dogs, see pages 30 and 31.

COSMOLOGICA, OR OBSERVATIONS ON NATURE, &c. (Continued from page 318.)

SOUND.

It has already been observed, in treating on the atmosphere, that sound is an effect of concussion on the air, and

* This phenomenon is remarkable near the Lake of Killarney in Ireland, where the sound of the human voice is several times reverberated, as if several persons were repeating, not only words, but often whole sentences. Instances also occur in many parts of Great Britain.

acts, to the amusement of many, and the astonishment of others, who do not give to the cause any consideration. The famous contrivance called the *Ear* of Dionysius, the tyrant of Syracuse, was constructed on this principle, by confining and directing the motion of the air, which bore the agitated element to a focus, and with it the full sound uttered or emitted.* The conducting of sound is derived from the same cause: Give a slight blow to one end of a piece of timber of proportional solidity and of any length, a person applying his ear at the other end shall hear it distinctly; when a blow of equal force on a detached substance, cannot be discovered by the sound, the air on the timber, and even in its pores, carries the sound vibrating to the end before it weakens by expansion.†

Another, and most important property of *sound*, is, the variation of which it is capable. Everybody is acquainted with the modulations of the human voice, in the expressions of anger, affection, pain, pleasure, joy, sorrow, hope, despair, persuasion, menace, &c.; even brutes understand and can produce sounds indicative of these sensations, though without the faculty of forming them into articulate or organic expressions. All and each of these sounds, in force and tone, loud or low, are formed by the air, according to the manner in which it is affected by the exertion used; the violence and impetuosity, or the placid and gentle impulse, given to its motion from the action of the breath, directed and formed by the organs of utterance. Music may be made vocal, and the melodious strings of the violin and the harp tremble at their own presumption, while they imitate the speaking of symphonies of the "human voice divine." What a pity this gift and command of speech should ever be perverted to the raising of discordant sounds! Let the lion roar, and the tiger growl, but the voice of mankind should ever sound in harmony with the social sympathies and benevolence of humanity, and the dignity of its divine Bestower. Sound, in unison with sense in the use of our communicative and colloquial faculty, is not an empty sound, it is a medium of mental commerce, by which we exchange the productions of mind and genius, and thereby mutually enrich ourselves with stores of knowledge. The peasant who walks in a wilderness, is delighted with the sounds of the songsters that perch on the sprays of the secluded grove: the atmosphere gives a body to the cheerful carol of the contented swain, while he unconsciously manifests the wisdom and goodness of that Power, which elates his mind to join in the chorus of nature to the praise and glory of nature's God! In all these things, to be mute (if dumb show alone were possessed), how little should we know of the enjoyments of life; how little of the reciprocal soothing that sound can give to the asperities and pains of our imperfect condition! But to apostrophize in that which is paramount to every other consideration, is rather an unworthy notice of the great conclusion to which all our reflections invariably tend: therefore, to resume the philosophical inquiry, let us further remark on the variety of sounds that occurs, and the immense distance to which they may be carried when uninterrupted. Several persons of undoubted veracity have declared, that on a calm

night, the voice of the officer relieving guard has been plainly heard across the Strait of Gibraltar to the opposite shores, nearly ten miles; and in England, the heavy hammer of an iron forge, about four hundred weight, has been heard more than seven miles; and, no doubt, the wonderful elasticity of the air is capable of transmitting sounds much further; the variety of sounds arises from the form and magnitude of the instrument which operates on the atmosphere according to the number and celerity of the atoms set in motion by the action of the instrument; thus a fife and a drum differ in sound, because the fife sets a smaller quantity of air in motion than the drum, the vibration of which agitates a large and heavy portion of the atmosphere, and consequently makes a sound more profound and heavy than the fife; the one sounds shrill by the quick motion of the air, the other dull by a greater expansion of motion; in the same way as a rippling rill differs from the noise of a river cataract, both of which would be silent if the air did not receive a concussion, setting in motion as much of its elements as the quantity of matter can affect, and generating sound adequate to the activity and extent of the whirling atoms that compose the atmosphere. The sense of hearing is produced by contact of the *aural* muscles and the vibration communicated by the motion of the air, a thin membrane* that connects itself with the nerves of the brain; from this circumstance sounds are agreeable or disagreeable, according to the constitution and condition of those nerves on which they are impressed; hence, it happens, that strong nerves are excited by martial music, while soft and mellow tones best please the sensations of relaxed muscles, and weak and melancholy dispositions. This brief essay on sound will give some few ideas to the contemplative mind, and help the unlettered philosopher in his inquiry into the nature of it and effect, and the reasons that point out their difference. Our next subject in pursuit of this theme will be *Light*, its cause and effect.

HISTORICAL MEMORANDA OF THE EMPIRE OF GHIZNI.

(IN THE MIDDLE AGES.)

THE EMPIRE of GHIZNI,† once greatly celebrated was a very extensive kingdom of ASIA, comprehending Karism, Bukharia, the greater part of Persia and of Indostan.

This empire was founded by a colony of *Tartars*, the AFGHANS, a very warlike race, who had been subjects of the kingdom of *Bukharia*. They revolted under their governor, ABSTAGE, in the 11th century, when they laid the foundation of the KINGDOM OF GHIZNI.

Its chief city and capital is GHIZNI, which is now either entirely ruined, or become of so little consideration, that geographers scarcely notice it. During its power it was the great emporium of the East. It is situated on the confines of India.

During the vast and rapid conquests of the SARACENS, all this country had been reduced under their subjection. On the decline of the power of the CALIPHS, however, the vast empire established by MAHOMET and his successors was divided into a number of independent principalities, most of which were but of short duration.

* This membrane is the tympanum or drum of the ear.

† Sometimes written GAZNA.

* *Dionysius*. He lived about 500 years before Christ, and had a contrivance called a *tympanum*, by which he could hear everything spoken in the prison adjoining; and thereby discovered all plots against him, and the persons engaged in them, who were yet at liberty, and whom he immediately seized.

† This effect is known by the savages in the interior of Africa, who, when they suspect the approach of some lurking enemy, lie down and apply one ear to the ground, and should he be in the vicinity, they can discern the sound of his tread, which they could not do in an upright posture.

In the year of the Hegira 364 (of the Saracen power), answering to the year 994 of the Christian era, the city of GAZNA, with some part of the adjacent country, was governed by MAHMUD GAZNI, who, from the revolt of the AFGHANS, raised himself to sovereignty, and soon became a great and celebrated conqueror.

He reduced under his subjection the greater part of Persia, and a considerable part of India; and under his successors it rose to a surprising magnitude.

In the early part of the eleventh century, it extended from Ispahan to Bengal; and from the Indian Ocean and the mouths of the Indus to the banks of the Jaxartes, which comprehends nearly half the continent of Asia.

This empire continued in the family of MAHMUD GAZNI for upwards of 200 years; when the Seljuk Tartars reduced the northern part, comprising Karism, Karosan, and Bukharia; and shortly after, the southern parts were subdued by one of the Gauri, who conquered Khosru Shah, the reigning prince, and bestowed the empire on his nephew GAYATHRI MOHAMMED.†

SULTAN MAHMUD, the first king of Ghizni and India, died at Gazna in the year 1030. No Mahometan prince before him ever attained to so exalted a point of power and splendour, ever rolled in so much wealth or was ever stained with so much blood.

The Gauri race, the successors of the Gazni Sultans, although they proved great warriors, and greatly extended their empire, did not long enjoy the sovereignty of Ghizni; for in 1218, JENGHIZ KHAN, having conquered the greatest part of China, and almost all Tartary, began to turn his arms westward, and set out against Ghizni, at the head of an army of 700,000 men.

To oppose this formidable force, MOHAMMED the reigning prince could raise only 400,000; and in the first battle, 160,000 of his troops perished; soon after this defeat of Mohammed, Genghis subdued the whole empire. (See History of Genghis Khan.)

It does not appear, that after this time, Ghizni ever made any considerable figure. It was completely subdued by the MOUVIS, A.D. 1222.

In the beginning of the eighteenth century, the AFGHANS again raised themselves into power, and spread their dominion over the adjoining province of CANDAHAR; and such was the imbecility of the Persian empire at that time, that many other provinces and tributary states were also induced to revolt.

When the King or SHAH of that time, whose name was HUSSEIN, opposed the growing power of this warlike people, he was totally defeated, and Ispahan was besieged and obliged to surrender, after having suffered dreadful calamities.

The AFGHANS now overran all Persia, and subjected it to themselves. Their sovereignty, however, (at this period,) was but of short duration, continuing only seven years, having fallen a sacrifice to the enterprising spirit of KOULI KHAN, sometimes called NADIR SHAH. (See Persia.)

The AFGHAN POWER is again revived in ASHMEED SHAH, who laid the foundation of the present kingdom of AFGHANISTAN, A.D. 1747.

* Sometimes written Gaoor; the country of the Afghans. The Gauri and Afghans are considered the same people. The country of Gaur is situated between Candahar and Balk, at the foot of Mount Paropopunus.

† This word has various spellings; viz. Mohammed, Mahomed, Mord, Mohumet, Mahomet, Mohamed, Mahomed, hence we have Mohamedan, Mohammedanism, but the most preferable is Mahomet, Mahometan, Mahometanism.

His conquests were numerous, rapid, and extensive. He subdued all the neighbouring independent tribes or states, all the western part of Persia, and a great part of Hindostan.

He fought the celebrated battle of PAUNIPUT, on the 7th of January 1761, in which nearly the whole of the Mahratta army perished; which army is said to have amounted to nearly 300,000 men.

Ashmed's force consisted of 50,000 of his own subjects, 30,000 Rohilla troops, and 10,000 belonging to the Indian chiefs. He had also 700 camels, and a few guns. The Mahrattas had about 200 guns.

ASHMED SHAH died in the year 1773, aged 49. He was succeeded by his son TIMOUR, who removed the seat of government from Candahar to Cabul. Hence this kingdom has had the several names of Ghizni, Candahar, and Cabul, so named from their capitals.

The AFGHANS are said to be remarkably active and hardy, industrious and laborious. No people are more diligent in husbandry, or more indefatigable in the chase; but when not so excited, they are very indolent; but their ruling passion seems to be the love of gain. No people in Asia are considered to have so few vices as the Afghans.

MUSIC.

Music is the science of combining sounds in such a manner as shall be agreeable and pleasing to the ear.

There are few people possessing the slightest pretensions to a good and refined taste but have spoken of Music in the highest terms of praise. The love of Music, indeed, seems to be, to a certain extent, inherent in our nature. The very rustics feel a sensation of gladness when they hear the simple melodies of the birds; a music which is, indeed, more grateful to nearly all persons than that of any other kind.

It is also observable of Music, that all those refined and superior minds, who have done honour to human nature by their immortal works, have given abundant proofs of their being very powerfully affected by it. MILTON seems to have been a perfect musical enthusiast, and SHAKSPEARE makes the love and relish of Music an indispensable accompaniment to moral goodness. He says,

"The man that hath not Music in his soul
Is fit for treasons, stratagems, and spoils;
Let no such man be trusted."

It is, however, very doubtful whether what is called a good ear for Music, has any connexion with good moral principle; for if it were so, every opera singer would be a miracle of virtue, which is by no means the case; hence these lines of SHAKSPEARE, which have passed into a perfect proverb, will not only be found erroneous, but also pernicious to mankind. Music is certainly very seductive and enchanting, and furnishes withal such an agreeable recreation, that few persons are insensible to its influence; and whilst Music is made only a recreation, it is very desirable; but when instead of this it is converted into the business of life, it generally becomes mischievous, and should be repressed; for the mere musician, who devotes his

* The Rohillas were a people from the mountains, between India and Persia, who erected themselves into an independent state on the east side of the Ganges, about 80 miles from Delhi.

day, not to say, his nights, to it, too often neglects the cultivation of those faculties which are of much more importance than Music of any kind, whatever; for those who pay so much attention to sound are seldom encumbered with a superabundance of sense. That Music is the best, in which sense is combined with sound, as that of the human voice. Music, certainly, is extremely pleasing, and well to hear, but to attain a thorough knowledge of the science, it requires too much time to be of any real benefit to the LEARNER; unless the Learner has an abundance of leisure, or is intended for a Professor. It cannot be denied, however, that as an ART it is truly delightful; and as a creation; if time can be allowed, that it is most innocent and useful.

One of the most remarkable properties of Music is, that it can affect us in whatever state of mind we may be when we hear it. If we are plunged into the most profound grief, it exhilarates our spirits, and makes us for a time forget the cause of their depression; if we be under the influence of passion, it can calm our disturbed souls, and restore reason to her throne and composition. We read, that when SAUL was troubled with an evil spirit, the beautiful minstrelsy of DAVID restored him to reason and happiness; and it is exceedingly probable, that in modern times, and even in humble life, many instances might be found of its exerting a power no less wonderful and beneficent. And, in an inferior degree, every one who listens with pleasure to any species of Music experiences a similar effect.

ON READING AND PRONUNCIATION.

We cannot read in company, and much less speak in public, if we are not well versed in the rules of pronunciation. The first of these rules consists in clearness. To this end we must speak slowly, distinguish the sounds, not neglect the finals, separate the words, the syllables, sometimes even certain letters, that might be confounded together, or by their jarring produce an unpleasant sound; stop at the points and commas, and wheresoever clearness and sense require it; for which purpose, pay much attention to the READING PAUSE, OR PAUSE OF DISTINCTION.

Secondly, the pronunciation must be easy and flowing; for the moment the orator is in pain, the audience suffer. Thirdly, we must assume that tone suitable to the subject. As there is a vast variety in these tones, it is very difficult to point out their differences, and to give their rules. But, it seems, they may be reduced to three kinds; the familiar tone, the nervous tone, and the middle tone, which may be so called, on account of the medium it keeps between the other two.

The FAMILIAR TONE is that of common conversation. It neither affects harmony nor runs into monotony. The NERVOUS TONE is that which is used in delivering weighty discourses, or in reading very serious works. The voice is always full, the syllables are pronounced with a sort of melody; and the inflections are never varied but with dignity. The MIDDLE TONE has a little more preparation than the familiar, and a little less than the nervous, or supported tone. These three species of tone have each their degrees, in which there is more or less energy, according to the subject, the audience, and the place in which it is delivered.

In regard to action and declamation, it is a sort of corporal eloquence and expression that consists in the gestures

and in the tones of the voice. This species of eloquence has, as well as the language of words, its elements. In like manner it has its simplicity and its copiousness; it has its particular harmony with each object, and a general one with the whole subject. It has its melody, its variations, and its propriety; and also its deficiencies and defects.

There are three sorts of gestures; some *imitative*, as when we counterfeit the tones or the manners of any individual; others *indicative*, which only point out any person, place, or thing; and, finally, there are *affecting gestures*, which paint the actions of the soul, and impress them on the spectator.

The *affecting gesture* is the picture of the soul. It is this that puts life into discourse, and also makes eloquence triumph. It takes in all the attitudes of the body, and all its emotion, without any exception.

There is no passion, nor emotion, nor a single part of an emotion, but what has its *particular gesture and tone*, its *modulation*, and its various degrees of *gestures and tones*. There is no orator without his peculiar gestures, and his individual tones, to express this emotion. And, indeed, there is no auditor but what is capable of seizing this expression, and feeling its justness.

Of all the emotions, the most correct, and the most eloquent, is that which discovers the confidence of the orator in the goodness of his cause, and his certainty of presenting it in a manner that shall persuade those to whom he is speaking. It is this emotion that constitutes what is called the *tone of authority*, when the orator, master of his subject, and also master of himself, appears, confident without pride, and relies on himself for success.

There is no art but what requires some powers; but if there be any one that particularly requires, and is deserving of them, it is that of the ORATOR, who is called to speak in public, and to present TRUTH in a triumphant manner.

"EASTERN APOLOGUE."

"AN old man sold sour milk, with which every day he gained two shag (which is less than a halfpenny) by going with it to the market-place in a city, with which he bought bread for his wife and son. One day he brought the milk to a desolate village, and leaving it for a minute, a serpent came and drank it, and put one tomaun (the value of fifteen shillings) in the pit. The old man observed it, took the tomaun, and went his way: thus it happened to him every day upon that spot, until he became a man of property. When the hour of his death came, he said to his son, 'Carry milk every day upon that spot; you will thus gain a tomaun.' The old man died. The son gained every day one tomaun, by going to that place with milk; but one day the son said to himself, 'This serpent has much money, I will kill her, and take the whole treasure at once.' He went, and cast a stone upon the serpent's head, which wounded her. The serpent said to the son, 'Do not come here again. Thy father was an old man; he brought milk here, and I left one tomaun for it; thy father died, and I gave it to thee by God's command. As you are now become covetous, and wanted to kill me, I kill thee.' She did bite him, and he died. 'Be not covetous, for by covetousness thou losest thy benefactor.'—*Wolff's Journal.*

NO. XLIII. GUIDE TO KNOWLEDGE.

CAMBRIDGE
SHIRE



CAMBRIDGESHIRE.

CAMBRIDGESHIRE, an inland county, is in the diocese of *Ely*, and in the Norfolk circuit. It is 50 miles in length, 25 in breadth, and 130 in circumference. It contains 17 hundreds, 163 parishes, and 7 market towns.

This county takes its name from its principal town, *Cambridge*, which evidently derives its name from its *bridge* over the river *Cam*. It is bounded on the north by Lincolnshire, on the south by Hertfordshire and Essex, on the east by Norfolk and Suffolk, and on the west by Huntingdonshire and Bedfordshire.

Cambridgeshire is divided into two unequal parts by the river *Ouse*, which waters a considerable portion of its breadth. The northern portion of the county, thus divided, consists, for the most part, of a vast extent of Fens, called the "*Isle of Ely*." In this marshy and flat district, however, there are numerous high tracts, which have, from being surrounded with marshes and pieces of water, all the appearance of little islets. These, and a good deal of the marshy land round them, which has been retained by skilful and laborious draining, are extremely fertile, and yield large crops of various kinds of corn, but especially oats. Some portion of this district, too, is appropriated to grazing purposes. It is on one of the largest of these islets that the city of *Ely* is built. This is by no means a well-built or populous place, but is much noted on account of its ancient and very beautiful cathedral. It derives considerable annual profit from the manufacture of a peculiar kind of clay, which is found here in great abundance. The whole of the district which bears the title of the "*Isle of Ely*," has the same disadvantages as the Fens of Lincolnshire; namely, badness of water, and insalubrity of air; to which may be added the disadvantage (though the soil is extremely fertile) of inundations, which frequently take place, and sweep away the crops just as they have nearly arrived at perfection. The south-western part of this county, verging towards Bedfordshire and Huntingdonshire, is by far the most pleasant and salubrious. It is also very fertile, and barley being its most thriving crop, a great deal of malt is annually sent hence to London, and other parts of England. This tract is also very fine in pasture; and the butter sold under the title of *Cambridge* is sure of a good and ready market in the Metropolis. The south-eastern part of this county, bounded by Essex and Suffolk, is chiefly a wide expanse of level, and heath-like country, with a thin and gravelly soil. This tract is, consequently, devoted to sheep-walks. The woodlands are very small, the whole quantity of timber throughout the county scarcely amounting to 8000 acres, and those scattered through no less than seven parishes. The generality of the inhabitants derive their support from the various employments of agriculture; and the only manufacture worthy of notice is that of white bricks and coarse pottery in the neighbourhood of *Ely*. Some of the poorer class, however, procure a subsistence by spinning yarn for the Norwich weavers.

Its principal rivers are the *Ouse* and *Cam*. The first of these, called the southern or greater *Ouse*, takes its rise near Brackley, in Northamptonshire, passes through the counties of Buckingham, Bedford, Cambridge, and Norfolk, and falls into the Wash, a little below Lynn. It receives in its course the waters of the *Cam* and *Little Ouse*. The level nature of the country through which the *Greater Ouse* passes, renders its current remarkably slow.

Its towns are, *Cambridge*, *Ely*, *Caxton*, *Linton*, *Wisbeach*, *Newmarket*, *Royston*, and *Soham*.

Cambridge, the capital of the county, is large, but a

very straggling and badly-built place. It is, however, populous, and has a very considerable internal trade. This latter circumstance is chiefly owing to its containing one of our Universities, consisting of sixteen halls, and having an immense number of students; in which respect, however, the *University of Cambridge* is greatly inferior to that of *Oxford*. Cambridge appears to have been a place of considerable antiquity, and was a well-fortified station in the time of the Romans. The most remarkable antiquities now extant are the remains of Pythagoras' School, Barnwell Priory, and the ruins of an old castle and intrenchments. It was called by the Romans *Caruboritum*. It suffered greatly in the Danish wars; and in the rebellion of *Wat Tyler* and *Jack Straw*, against *Richard II.*, they entered the town, and burnt the records of the University. The original foundation of this seminary is involved in great obscurity.

Among the most remarkable characters of Cambridge was *Jeremy Taylor*, chaplain to *Charles I.*, who has been called the *Christian Plato*. He was the son of a barber. *Henry Kirk White* died here in 1806, in consequence of too much exertion in the pursuit of his studies. *Cumberland*, the author of several "*Dramatic Works*," "*The Observer*," a periodical paper of 6 vols., &c., was also a native. He died in 1811. *Hobson*, the carrier, whom *Milton* has immortalized in his verse, and from whom originated the saying of "*Hobson's Choice*," first let out horses at this place. He died in 1630. Cambridge is 13 miles from St. Ives, Royston, and Newmarket, 16 from *Ely*, and 51 from London.

The only other place of any importance in this county is *Wisbeach*, a populous and well-built town; but it sustains great loss and inconvenience from its river being only navigable for large vessels to a point nearly six miles below it. From this circumstance the town is obliged to employ an immense number of barges, the lading and unlading of which cause great expence and delay. *Wisbeach* is situated in the *Isle of Ely*. It does a good trade in corn and butter.

Royston, a considerable town, is situated partly in Cambridgeshire, and partly in Herts. Under the Market-place is an ancient subterranean chapel, supposed to be of Saxon construction. *Henry Andrews*, the celebrated editor of "*Moore's Almanack*," died here in 1820. *Royston* is 37 miles from London.

Caxton is noted as the birth-place of *William Caxton*, the first printer in England, who died here in 1486; by some, however, this assertion is considered erroneous, for we have his own authority that he was born in Kent. Of this town also was *Matthew Paris*, a celebrated historian. *Linton*, *Soham*, and *March*, are small towns, and but of little note. *Soham* is noted for the ruins of its ancient abbey. Near March have been found several hundred silver coins, which, from their dates, appeared to be more than two thousand years old.

Newmarket, which stands on the borders of the county, is partly in Cambridgeshire and partly in Suffolk, is noted for *Horse-races*, which have long been the undoing of many, and the enriching but of few. During the season, here is seen the oddest jumble of mankind the world ever saw; the wagoner in his straw boots often curses the nobleman with his star, for a *bite*; and peers of the realm think it no disgrace to hold their hands before the greasy pouch of a losing farmer or butcher. The chief part of the town is situated in Suffolk, but the whole of the race-course, on which the town principally depends for its support, is in this county. This place, notwithstanding its name, is of considerable antiquity; for in the time of *Edward III.*, the

Bishop of Carlisle, who was afterwards so troublesome to HENRY IV. was called "Thomas of Newmarket." New market is 14 miles from Cambridge, and 61 from London.

Cambridgeshire is one of the counties that were inhabited by the *Iceni*, who are supposed to have derived their name from the *Ise*, now called the *Ouse*, which runs through this part of the island. It has been common for the people of all countries to distinguish themselves by the name of the river near which they first settled. Thus, in Asia, the Indians were named after the river *Indus*; in England, the *Lancastrians*, from the *Lan*, and the *Northumbrians* from the *Humber*. The change of *Ise* into *Ice* was very natural and easy.

Among its most eminent natives are, Sir JOHN CLARK who was honoured with the tutorship of EDWARD VI.; Dr ISAAC BARROW, Bishop of St. Asaph; and MATTHEW PARIS, a celebrated historian; JEREMY TAYLOR, the author of "*Holy Living and Dying*"; and WILLIAM CAXTON, the printer.

Population of the chief Towns.

Cambridge.....	20,917
Ely	6,189
Linton	1,678
March and Parish	5,117
Newmarket	1,810
Roxton.....	1,757
Soham and Parish.....	3,667
Wisbeach and Parish	7,253

Cambridgeshire sends seven members to Parliament; viz. 3 for the County, 2 for the University, and 2 for the Borough of Cambridge.

OBSERVATIONS ON THE INDIANS.

As various tribes of INDIANS are found in many parts of the BRITISH POSSESSIONS in AMERICA, the following remarks may not be considered as unworthy of attention.

The INDIANS are usually called SAVAGES. We call them savages, because their manners differ from ours, which we think the perfection of civility. They think the same of ours.

Perhaps, if we could examine the different manners of different nations with impartiality, we should find no people so rude as to be without any RULES OF POLITENESS, nor any so polite as not to have some remains of RUDENESS.

The Indian men, when young, are hunters and warriors; when old, counsellors; for all their government is by the counsel of the SAGES.

There is no force, there are no prisons, no officers to compel obedience, or inflict punishment. Hence they generally study oratory, the best speaker having the most influence.

The Indian women till the ground, dress the food, nurse and bring up the children, and preserve and hand down to posterity the memory of public transactions.

The employments of the women are accounted natural and honourable. Having few artificial wants, they have abundance of leisure for improvement by conversation.

Our laborious manner of life, compared with theirs, they deem slavish and base; and the learning on which we value ourselves, they regard as frivolous and useless.

An instance of this occurred at the Treaty of LANCASTER, in PENNSYLVANIA, in the year 1744, between the Government of VIRGINIA and the SIX NATIONS.

After the principal business was settled, the commissioners from VIRGINIA acquainted the INDIANS by a speech, that

there was at Williamsburg a COLLEGE, with a fund for educating YOUTH; and that, if the SIX NATIONS would send down half a dozen of their lads to that College, the Government would take care that they should be well provided for, and instructed in all the learning of the white people.

It is one of the Indian rules of politeness, not to answer a public proposition the same day that it is made; they think that it would be treating it as a light matter, and that they show it respect by taking time to consider it, as of a matter that is important.

They therefore deferred their answer till the day following, when their speaker began by expressing their deep sense of the kindness of the Virginian Government in making them that offer; for "we know," says he, "that you highly esteem the kind of learning taught in your Colleges, and that the maintenance of our young men, while with you, would be very expensive to you."

"We are convinced, therefore, that you mean to do us good by your proposal, and we thank you heartily. But you, who are wise, must know that different nations have different conceptions of things; and you will therefore not take it amiss, if our ideas of this kind of education happen not to be the same with yours."

"We have had some experience of it: several of our young people were formerly brought up at the colleges of the northern provinces; they were instructed in all the sciences; but when they came back to us, they were bad runners; ignorant of every means of living in the woods; unable either to bear cold or hunger; knew neither how to build a cabin, take a deer, nor to kill an enemy; spoke our language imperfectly, and were therefore neither fit for hunters, warriors, nor counsellors; they were, in short, good for nothing."

"We are, however, not the less obliged by your offer, though we decline accepting it; and, to show our grateful sense of it, if the gentlemen of VIRGINIA will send us a dozen of their sons, we will take great care of their education, instruct them in all we know, and MAKE MEN of them."

Having frequent occasions to hold public councils, they have acquired great order and decency in conducting them. The old men sit in the foremost ranks, the warriors in the next, and the women and children in the hindmost.

The business of the women is to take exact notice of what asses, imprint it in their memories (for they have no writing), and communicate it to their children.

They are the records of their council, and they preserve additions of the stipulations in treaties one hundred years back, which, when we compare them with our writings, we always find exact.

He that would speak rises. The rest observe a profound silence. When he has finished, and sits down, they leave him five or six minutes to recollect; that if he has omitted anything he intended to say, or has anything to add, he may rise again and deliver it. To interrupt another in error or common conversation, is reckoned highly indecent.

How different this is from the conduct of a polite British House of Commons, or Lords, where scarcely a day passes without some confusion, that makes the Speaker hoarse in calling to order; and how different from the mode of conversation in many polite companies of EUROPE, where, if you do not deliver your sentence with rapidity, you are cut off in the middle of it by the impatient loquacity of those you converse with, and never suffered to finish it!

The INDIANS are particularly noted for their great HOSPITALITY.

Obs. It is remarkable, that in all ages and countries, hospitality has been allowed as the virtue of those whom the civilized were pleased to call barbarians. The GREEKS celebrated the SCYTHIANS for it. The SARACENS professed it eminently; and it is, to this day, the reigning virtue of the wild ARABS.

ST. PAUL, too, in the relation of his voyage and shipwreck on the island of MELITA, says, "The barbarous people showed us no little kindness; for they kindled a fire, and received us every one, because of the present rain, and because of the cold."

POETRY.

POETRY is the language of passion, or of an enlivened imagination, reduced to measure or rhyme. Poetry can boast of high antiquity. The earliest accounts of most nations have been transmitted by their poets. Indeed, there is scarcely on the earth's extended surface, a nation so rude, or even a hunting tribe so barbarous, as not to have its own peculiar poetry. It is not merely in highly-civilized society that POETRY is admired, and that POETS are caressed; for the most part savage tribes have their amatory, warlike, hunting, and devotional songs. So universal is this love of poetry, that the first words which delight a child, and take a strong hold of its memory, are the artless rhymes of the nursery; and many a tall and stern commander has lain wounded upon the battle field, or sunk exhausted among the overwhelming waves, whose thoughts have spontaneously wandered even amid his last agonized struggles to the scenes of his youth, and the simple lullaby with which his boyhood was soothed into slumber.

The pleasure which POETRY properly so called affords, springs from three constituent sources; viz. *harmony*, *variety*, and regularity of *rhyme* and *metre*; propriety and vividness of language; and a subject matter pleasingly conducted. By considering this we shall easily discover how it is that the simplest rhymes, upon the most simple subjects, have a pleasing influence over the minds of children, and also over those of savages, of whom it may most truly be said, "that they are but children of a larger growth."

It cannot but be granted that POETRY possesses an almost universal power of pleasing, which arises partly by its resemblance to MUSIC, partly by the pleasing facility with which it is pronounced, and partly by the great aid which it affords to the memory.

Hence, it will be observed, that one great cause of the pleasing power of POETRY is the harmonious arrangement of its language, but the chief requisite is the language itself, which must give a vivid representation, either direct, or by figure, of the circumstances related.

POPE says, that a good poet should make his language not only convey his meaning forcibly and clearly, but even adapt its sound to the feelings related; and he has been much praised for his power in that respect, of which an excellent illustration is afforded by his celebrated lines, in which is a satirical censure of the abuse of the Alexandrine; he says,

"A needless Alexandrine ends the song
Which, like a wounded snake, drags its slow length along."

A very ordinary ear will discover the nice art with which the pauses and whole structure of the latter part of the two lines are adapted to the expression of a sound in consonance with the sense.

It is but fair, however, to admit that such an exact adaptation of sound to sense as above noticed, is by no means commonly to be found, not even among our best and most admired poetry.

In less degree it is more uncommon, and with that degree candid and enlightened criticism will be satisfied. But on the expression of the sense is a point upon which a larger demand is made.

Harmony, as before observed, is a very copious source of pleasure, but it will never atone if sense be wanting.

POETRY deals very largely in figurative expressions, but in their use it requires a nice and delicate judgment; there being "but one step between the sublime and the ridiculous."

In summing up these remarks, we may observe, that POETRY pleases by the harmony of its arrangement, the vivid expression of its phraseology, and the interesting nature of its subject; and it follows that, the comparative excellence, or worthlessness of POETRY, depends upon its possessing these in a greater or less degree.

OF THE DIFFERENT KINDS OF POETRY.

POETRY may be divided into the *epic*, *lyric*, *elegiac*, *pastoral*, *didactic*, *descriptive*, *satirical*, *harmonic*, and *burlesque*.

Of all poetical works, that of the *EPIC* is the most dignified, and the most difficult of execution. The *EPIC POEM* creates admiration; *TRAGEDY* forces from us tears; *COMEDY* makes us laugh; and *PASTORALS* produce gentle and calm sensations. And thus it is with the other kinds according to their nature.

Every reader expects to receive from them an impression of such or such a kind, and if the work does not convey it to him, or conveys it but imperfectly, in a confused equivocal manner, he has a right to be displeased. It is *NATURE* that forms *POETS*, but it is *ART* that brings them to a certain degree of perfection.

An *Epic poem* is that which treats on sublime subjects, and records the actions of heroes, disguised in allegory, the object of which is to form the manners by instruction.

It is expected from an *Epic Poem*, that it should charm the reader, excite his admiration, employ at once his reason, judgment, and wit; touch the heart, and make the soul feel a series of delightful sensations, which must be interrupted a few moments, but in order only to be renewed with the more vivacity.

The fable in every *Epic poem* should be founded in fact, and fiction should only complete that outline, which has been traced by the finger of truth. The machinery should be subject to the main design, and the action should be simple and uniform.

In all *Epic poems*, there are certain parts called *EPISODES*, which are certain little actions subordinate to the principal action, in order to unbend the reader's mind by this variety. These parts might be omitted, and yet the poem in which they are found would still be an *Epic poem*.

OBSTINACY.

OBSTINACY OR STUBBORNNESS is usually the vice of persons who are at once self-conceited and ignorant.

This vice is unbecoming in persons of any age, but is more especially so in the young. In them, it is most ungraceful, and to their improvement in learning, and their future advancement in society, it is a most serious obstacle.

It is in vain that the mightiest geniuses of the age exert themselves to furnish the means of acquiring knowledge; it is in vain that the tenderness and affection of parents prompt them to employ the ablest instructors for their children, if the latter be OBSTINATE.

When that is unhappily the case, KNOWLEDGE is excluded from their minds, as by a "gate of iron." OBSTINACY revolts against instruction, and prompts ignorance at once to pride itself upon its deficiencies, and to perpetuate them.

Every added year renders this vice more inveterate, and more predominant; until at length he who indulges it becomes proverbially hateful to all who know him.

Every page of SCRIPTURE abounds with either precepts, or examples, hostile to this vice; so that it is contrary to RELIGION, as well as to MORALITY.

In the affairs of life, OBSTINACY is productive of much misery and adversity to those who are addicted to it, as well as to those who are so unfortunate as to be dependent upon or connected with them.

Some are so thoroughly the creatures of OBSTINACY, that they make it a point of honour never to retract what they have said, or undo what they have done, even though it be ever so clearly demonstrated to them, that they have spoken unadvisedly, or untruly, or that they have acted unjustly, or unadvisedly.

Such persons are scarcely to be pitied, however severe their sufferings may be, which result from their obstinate pertinacity; for they may be said literally to pander to their own shame, and work their own destruction.

There is in OBSTINACY no usual portion of FALSE PRIDE. Actuated by this, the obstinate man conceives it to be disgraceful to confess himself in error, and degrading to his dignity to repair any injury he may have done. Just as though CANDOUR were a fault; and COMMON HONESTY (for JUSTICE in familiar terms is no more) an actual crime.

Such false notions are most disgraceful to the understandings of those who entertain them, and very frequently mischievous, if not fatal, in their effects.

POPE, in the subjoined lines, very spiritedly describes the effect of that cursed pride, which is more properly called OBSTINACY.

" Of all the causes which conspire to blind
Man's erring judgment, and misrule the mind,
What the weak head with strangest bias rules
Is PRIDE, the never-failing vice of fools.

" PRIDE, where wit fails, steps in to our defence
And fills up all the mighty void of sense:
If once right reason drives that cloud away,
TRUTH breaks upon us with resistless day."

POPE'S ESSAY ON MAN.

Of all the vices, there is scarcely one more to be dreaded than this. Whoever possesses it, never is or ever can be happy, so long as he or she shall retain it.

The many evils arising from OBSTINACY, are dreadful indeed; as it not only destroys the peace of individuals, but also of families; and all for the want of a little CANDOUR and JUST FEELING.

OBSTINACY is represented by the figure of a woman with the ears of an ass. She is dressed in black, has a piece of lead upon her head, and is standing in a dark place with a mule by her side.

She is dressed in black, because that colour is not susceptible of any other hue, and denotes that an obstinate person will not alter his opinion for the right of REASON, or the power of demonstration.

The lead upon her head indicates ignorance and stupidity, and that ignorance nourishes and supports OBSTINACY.

The darkness of the place in which she stands, alludes to obscurity of intellect.

The MULE is made an attribute of this subject, on account of the invincible obstinacy for which that animal is proverbial.

HISTORY AND CONQUESTS OF TAMERLANE.

(IN THE MIDDLE AGES.)

TIMOUR BEG II, better known under the name of TAMERLANE, made a fortune yet more extraordinary than that of GENGHIS KHAN. Although born without dominion, he acquired an empire greater than that of Alexander. At a very early period of his life he exhibited uncommon courage, and at the age of twenty-five attained the greatest dignities.

He spent nine years in different countries in travelling for improvement. He was lame. Some say that he was the son of a shepherd; others, that he was of the blood of GENGHIS.

His first conquest was that of BALK, the capital of Sogdiana. He conquered the three great empires of PERSIA, INDIA, and EGYPT, and many other minor kingdoms; he plundered Bagdad, Delhi, Cairo, and other rich cities; and took BAJAZET, the first emperor of the Turks; so that his power, riches, and magnificence, became immense.

On his return from Egypt he fell upon SYRIA; it was then that his assistance was solicited against the celebrated BAJAZET, by some Mahometan princes, whom Bajazet* had deposed, and by the Christian Emperor of Constantinople, whose capital he besieged.

TAMERLANE summoned the Turkish sultan to raise the siege, and upon his refusal he marched to give him battle.

These two terrible enemies met in the plains of ANCIRE, in Phrygia, with immense armies; Schilperger, who was in the number, says that BAJAZET had 400,000 men, and his rival 1,600,000. However great the exaggeration of this account may be, it is certain, that after one of the most furious and dreadful battles on record, BAJAZET was conquered and made prisoner. In this conflict, it is said, that 200,000 Turks were slain.

Here also historians differ greatly, as regards the character of TAMERLANE. Some represent him as a ferocious monster, who put his conquered enemy into an iron cage,† for the amusement of his soldiers; while others ascribe to him an elevated soul, and a disposition so magnanimous, that he endeavoured to soften the misfortunes of the inflexible BAJAZET, and even wished to become a father to his children.

However this may be, TAMERLANE was now master of Asia Minor, of Syria, of Egypt, of Persia, and returned to SAMARCAN, which he considered as the capital of his empire.

Here he received, after the example of Genghis Khan,

* Emperor of the Turks, who was a very renowned warrior, but a great tyrant. In the beginning of his reign he was very successful. In 1393 he had conquered all Thrace, Macedonia, Thessaly, and the greater part of Myenia and Bulgaria.

† The fate that Bajazet had destined for his adversary if had been the victor.

ambassadors from the whole world : he gave a magnificent feast, at which he married all his grandchildren.

After subduing all the west of Tartary and Aisa, he turned his arms against INDOSTAN, and of which he made an easy conquest. But the cruel monster, not content with his victory, ordered a general massacre of the inhabitants, in consequence of which, it is said, 100,000 of them were murdered in one hour.

In 1399 he defeated the Indian army, with great slaughter; and soon after took the city of DELHI, which then consisted of three cities, surrounded with walls.

Though no resistance was made, and of course there was no pretence for bloodshed, yet a quarrel was soon made by the TARTAR'S SOLDIERS, who pillaged the city, massacred most of the people, and sold the rest for slaves. The spoils, in plate and jewels, were immense.

After this dreadful carnage TAMERLANE traversed the other provinces of INDOSTAN, everywhere defeating and slaughtering the Indians without mercy.

After conquering the country, he left MAHMUD in possession of the throne, reserving only PANJAB to himself. He now retired to SAMARCAND, and died in the year 1406, in the 36th year of his reign, aged 71.

The children of TAMERLANE fought for his inheritance, and dispersed it. The TURKS revolted, but retained Persia but a very short period; and at this day the MOGUL (of Delhi) acknowledges the sovereignty of his successors, which is now only a shadow.

The wicked and fortunate AURENGZEBE, who died emperor of MOGUL in 1707, at nearly 100 years of age, was one of his descendants.

There remain vast monuments of TAMERLANE'S grandeur in the cities, towns, castles, and walls, which he built; in the rivers and canals which he dug, as well as in the bridges, gardens, palaces, hospitals, mosques, and monasteries, which he erected in the various parts of Asia.

HISTORICAL MEMORANDA OF TROY, AND OF THE TROJAN WAR.

On the coast of Asia, opposite to Greece, reigned PRIAM king of TROY, a peaceful prince, descended from a long line of kings, having himself a numerous race, almost entirely composed of youthful heroes.

His kingdom, by its opulence, the bravery of his subjects, and the alliances which he had formed with the Assyrian Monarchs, was as famous in that part of Asia, as the kingdom of MYCENE was in Greece.

The house of ARGOS, established in this latter city, acknowledged for its chief AGAMEMNON, son of ATREUS, who was the son of Pelops. He had annexed to his dominions those of Corinth, Sicyon, and several neighbouring cities.

His power, increased by that of his brother MENELAUS, who had just espoused HELEN, heiress to the kingdom of Sparta, gave him great influence in that part of Greece, called from his grandfather PELOPS, Peloponnesus.

Tantalus, his great grandfather, reigned first over Lydia, and had, in violation of the most sacred rights, retained in chains a Trojan prince, named GANYMEDE. Further, HERCULES, descended from the kings of Argos, had more

recently put to death Laomedon, and carried off his daughter Hesione.

The remembrance of these unrevenged injuries maintained an hereditary and implacable hatred between the houses of PRIAM and AGAMEMNON, which every day became more inveterate from a rivalry of power, the most terrible and sanguinary of all passions.

PARIS, the son of PRIAM, was the man for whom it was reserved to blow into a flame those embers of resentment. PARIS came into Greece, and repaired to the court of MENELAUS, where the beauty of HELEN attracted every eye.

To the advantages of person, the Trojan prince united the desire of pleasing, and HELEN abandoned all to follow him. In vain did the *Atrides** endeavour by gentle means to obtain satisfaction equal to the offence; PRIAM considered his son, only as the avenger of those wrongs which his house and all Asia had experienced from the Greeks, and rejected every proposal for an accommodation.

The Grecian nations seem like the forest agitated by a tempest. Kings, whose power was confined within a single city, and monarchs, whose empire extended over many nations, all equally inspired with the spirit of heroism, repair to MYCENE.

They swear to acknowledge AGAMEMNON chief of the expedition, to avenge MENELAUS, and to raze ILIUM to the ground. If some at first refuse to join in this confederacy, they are soon persuaded by the powerful eloquence of the venerable NESTOR, king of Pylus; by the artful language of ULYSSES, king of Ithaca; by the examples of AJAX, of Salamis; IDOMENUS, king of Crete; ACHILLES, son of Peleus, who reigned over part of Thessaly; and a crowd of youthful warriors, already intoxicated with the hopes of success.

After long preparations, the army, consisting of about one hundred thousand men, assembled at the port of Aulis, and embarked on board a fleet of near twelve hundred vessels for the Trojan shore.

The city of Troy, defended by towns and ramparts, was likewise protected by a numerous army, under the command of ILector, son of Priam; with him were many allied princes, whose troops were joined to those of Troy.

Being assembled on the shore, they present a formidable front to the Grecian army, which having repulsed them, shuts itself up in a camp with the greatest part of its vessels.

Again the hostile armies try their strength, and the doubtful success of many battles proves that the siege will be protracted to a distant period.

The Greeks having nothing but slight-built vessels, and very little knowledge of the art of navigation, had not been able to establish a regular communication between Greece and Asia, and provisions now began to fail.

Consequently, part of the army was sent to ravage, or sow grain, in the isles and neighbouring coasts, whilst parties dispersed themselves over the country, and carried off the flocks and harvests.

Another motive rendered these proceedings indispensably necessary, not so much always for the advantage of their spoils, but the depriving PRIAM of their assistance.

Among the most celebrated of the Grecian heroes in these great exploits was ACHILLES, who carried everywhere fire and sword; having, like a raging torrent, swept all away before him, he returned loaded with immense booty, which he distributed among the army, and with numberless slaves, which were divided among the generals.

Troy was situated at the foot of Mount Ida, at no great distance from the sea; the tents and vessels of the Greek occupied the shore; the space between was the theatre of their courage and ferocity.

The Greeks and Trojans, armed with pikes, clubs, swords, and javelins, defended by helmets, breastplates, and shields, in thick-embattled rank, and headed by their generals, advanced to meet each other; the former with loud shouts, the latter with a silence still more frightful when, after a long and bloody contest, night parts the combatants; the city, or the entrenchments, receive the vanquished; and the contest costs much blood, without any decisive advantage.

Next day the pile consumes the slain, and tears and funeral games honour their memory. The truce expires, and the conflict is renewed. Often in the heat of an engagement, a warrior, with a loud voice, defies to single combat any who shall oppose him.

The troops in silence see them, now launch their javelins, or the massive fragment of a broken rock, now hand to hand engage, and try by mutual insults more to provoke each other's rage.

Victory here did not satiate their fury; for if they could not disfigure the body of their fallen enemy, and deprive it of the rites of burial, they strove at least to spoil it of its arms; but in an instant the troops on both sides advance, either to ravish from him his prey, or to secure it to him, and the action becomes general. Thus was conducted the system of warfare among the ancient Greeks and Trojans.

Many times were the former nearly masters of the city, and as often did the latter force the camp of the Greeks, though palisades, ditches, and walls, defended it.

The armies now began to appear diminished, and the warriors to disappear. Hector, Sarpedon, Ajax, and even Achilles himself, lay numbered with the dead.

At the sight of this reverse, the Trojans sigh for the restitution of Helen, and the Greeks after their native soil; but both are restrained by shame, and continue in rapine, war, and bloodshed, in the same manner they had begun.

The whole world had fixed its eyes on the plains of Troy, on that spot where glory loudly called those princes who had not from the beginning engaged in the expedition.

Impatient to signalize themselves on this new theatre of action, open to all nations, they came successively to join their forces to those of their allies, and often perished in the first engagement.

At last, after ten years' sanguinary resistance and labour, after losing the flower of their youth, and their choicest heroes, the city fell under the efforts of the Greeks; a fall so great, that it still serves for the principal epoch in the annals of nations.

Its walls, habitations, and temples, levelled with the ground; Priam expiring at the foot of his altars; his sons massacred around him; Hecuba, his wife; Cassandra, his daughter; and many other princesses loaded with chains, and dragged like slaves through the blood which ran in torrents down the streets, amidst a whole people, consumed in the devouring flames, or destroyed by the avenging sword; such was the catastrophe of this dismal and horrid tragedy.

The Greeks satisfied their vengeance; but this cruel satisfaction was the measure of their prosperity, and the beginning of their misfortunes.

Their return was distinguished by the most cruel disasters. Menestheus, king of Athens, ended his days in the island of Melos; Ajax, king of the Locrians, perished with his

whole fleet; Ulysses, not less unfortunate, was frequently in danger of the same fate, during ten years that he traversed the main; others, still more worthy to be pitied, were received by their families like strangers invested with titles which through long absence had been forgotten, and which an unexpected return had now rendered odious.

Instead of the transports of joy their presence ought to have excited, they heard nothing around them but the cries of ambition and sordid interest; and of many other crimes too horrid to mention: betrayed by their relations and friends, the major part, under the conduct of Idomeneus, Philoctetes, Diomedes, and Teucer, went into unknown countries in search of more faithful connexions.

The House of Argos involved itself in the blackest times, and had rent itself asunder with its own hands. Agamemnon found his bed and throne polluted by a base usurper, and died murdered by his wife Clytemnestra, who some time after fell by the hand of her own son Orestes.

These horrors, at that time spread over all Greece, and still represented on the Athenian stage, should be a warning to both monarchs and people, and teach them to dread even victory itself.

That of the Greeks was as fatal to themselves as to the Trojans; weakened by their exertions and their successes, they could no longer resist their intestine divisions, and accustomed themselves to that destructive idea, that war is as necessary to states as peace.

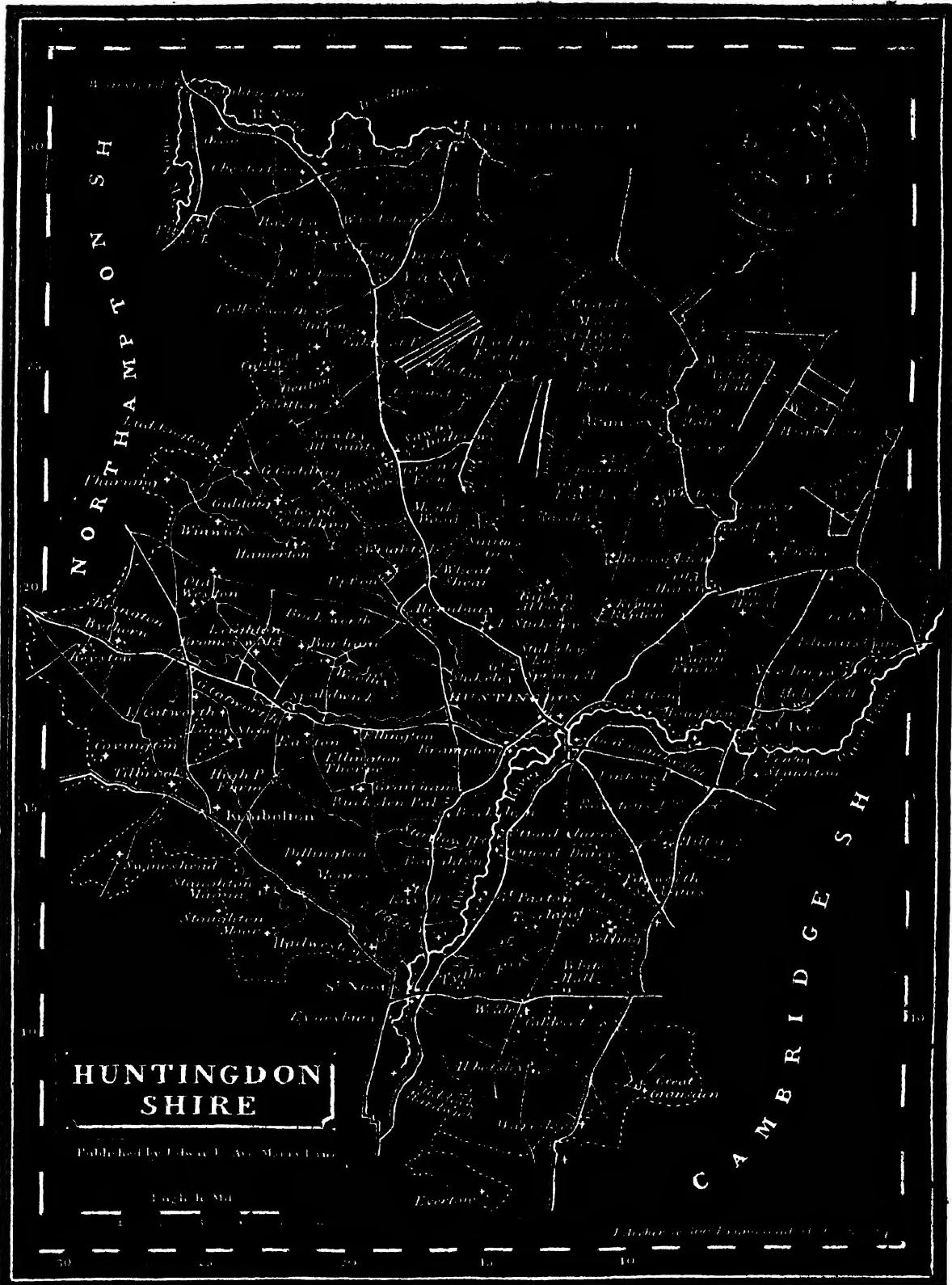
In a few generations, the greater part of these sovereign houses, which had destroyed that of Priam, fell, and were buried in oblivion, and within eighty years after the demolition of Troy, part of the Peloponnesus passed into the hands of the Heraclides, or the descendants of Hercules.

It is generally related that Troy was at length taken by the stratagem of a Wooden Horse, by the treachery of Sinon, a crafty Greek, who, by delusive arts, prevailed upon the Trojans to receive the horse into the city, wherein were concealed a number of resolute Greeks, who in the night opened the gates, and let in the Grecian army, when they immediately sacked and burnt the city, and razed it level with the ground.

The destruction of Troy is one of the most memorable epochs of antiquity; and it is also worthy of remark, that the misfortunes of this city have furnished the subject of the two most perfect epic poems in the world; viz., the Iliad and the Aeneid, the former so named from Ilium, the more ancient name of Troy; and the latter from Aeneas, which has for its subject the settlement of Aeneas in Italy.

INTERESTING RELIC OF ANTIQUITY.—In the museum at Naples is the bronze cock of a reservoir, discovered at Capri during the excavations which were made in the palace of Tiberius. Time having firmly cemented the parts together, the water in its cavity has remained hermetically sealed during seventeen or eighteen centuries. Travellers are shown this curious piece of antiquity, which being lifted and shaken by two men, the splashing sound of the contained fluid is distinctly heard.

No. XLIV. GUIDE TO KNOWLEDGE.



HUNTINGDONSHIRE.

HUNTINGDONSHIRE, an inland county, is almost surrounded by the counties of Cambridge and Northampton. The *Ouse*, at its entrance, separates this county from Bedfordshire, and at its exit, from Cambridgeshire. It received its name from the Saxons, who, from its being a sporting country, called it *Huntadune*. It is 24 miles in length, 18 in breadth, and 67 in circumference.

Its chief rivers are the *Ouse* and the *Nen*. The *Ouse* rises at Brackley, in Northamptonshire, and enters this county at *St. Neots*; the *Nen* has its source near Daventry, flows by *Oundle*, and fills the several *Meres*.

Huntingdonshire is divided into 4 hundreds, in which are 6 market-towns, namely, *Huntingdon*, *St. Ives*, *Kimbolton*, *Ramsey*, *St. Neots*, and *Yaxley*; besides which there are 78 parishes, and 279 villages.

The air is generally good, except in the Fenny tracts, which are frequently subject to unwholesome damps. The chief products are, corn, fine-horned cattle, and a very rich and delicate kind of cheese, which is made in the neighbourhood of Stilton; where it is usually sold, hence it is called *Stilton cheese*. Huntingdonshire, for the most part, is a farming county, and produces no manufacture worthy of notice.

Under the Saxon Heptarchy, this county belonged to the kingdom of *Mercia*; at present it is included in the Norfolk circuit, in the province of Canterbury, and in the diocese of Lincoln.

HUNTINGDON, the county town, is supposed to have derived its name from the Saxon word *Huntadune*, signifying *Hunter's Down*, from the great convenience of its district for hunting. It is noted for being the birth-place of that extraordinary character, OLIVER CROMWELL, the Usurper. It is recorded that Huntingdon had formerly 15 churches, which in CAMDEN's time were reduced to 4, but now it has only two. The decay of this once-flourishing town is attributed to the loss of the navigation of the river, which, according to SPEDD, was maliciously obstructed by one *Grey*, who choked up the channel. The meadows on the banks of the river, in the neighbourhood of Huntingdon, are greatly admired for their picturesque appearance.

GODMANCHESTER, a little to the south-east of Huntingdon, was a city of considerable note in the time of the Romans, known by the name of *Durostorpae*, or *Bridgwater over the Ouse*. This is esteemed one of the largest villages in England. When JAMES I. was passing through this place on his way to the Metropolis, the farmers met him about a mile and a half from the town, with 70 ploughs, drawn by as many teams of horses, which novel sight was so agreeable to his Majesty, that he granted them a charter, to be governed by 2 bailiffs, and 12 assistants; at the same time, the social monarch condescended to partake of a cold collation, which they had prepared for him under a large white-thorn bush, which, time having decayed, the farmers, to commemorate the grateful event, replaced with a wych-tree, at present large and pleasant, and which still goes by the name of the *King's Bush*. It is also known to travellers by the name of the *Beggar's Bush*, and stands in the London road, between Huntingdon and Caxton.

ST. IVES, a considerable town, takes its name from a Persian bishop, named *Ivo*, who, in the year 600, came over to England to preach the Gospel, and died at this place. It was called by the Saxons, *Sicpe*. Near *St. Ives* is a farm, which was rented by the usurper, OLIVER CROMWELL, where, before he obtained a seat in Parliament, he endeavoured to repair his fortune, said to have been much

diminished by his profligate life. Here was formerly a priory, which is now ruins. SAMUEL JACKSON PRATT, the author of "The Gleaner," and a miscellaneous writer, was born at *St. Ives* in 1749. It appears, from an old Saxon coin, noticed in the Philosophical Transactions, that this place had formerly a mint; it was once also in great repute for its medicinal waters. It is now principally noted for its great market for cattle, which, next to Smithfield, is the largest in England. It is 6 miles from Huntingdon, and 60 from London.

ST. NEOTS, so called from a monastery of that name, which was burnt by the Danes, is a moderately populous town, seated on the *Ouse*. It is noted as the birth-place of *Bellingham*, who assassinated Mr. PERCEVAL, the prime minister of England, in the lobby of the House of Commons, in 1812.

KIMBOLTON, a small town about 8 miles from *St. Neots*, is noted for its castle, which is considered a great ornament to this part of the country. This castle became the place of retirement of Queen CATHERINE, after her divorce from HENRY VIII., where she resided three years, and died here in 1536. She was interred in Peterborough Cathedral. This castle now belongs to the Duke of Manchester.

RAMSEY, formerly famous for its wealthy abbey, is seated in the *Fens*, on rich ground, proper either for tillage or pasture; and being contiguous to the *Meres* of Whittlesea and Ramsey, it is noted for abundance of wild-fowl, pike, and eels. The Abbot of Ramsey sat in Parliament, and held the barony of Broughton; and the abbey was formerly so wealthy, that this town was thence called "Ramsey the rich;" but falling into decay, it is now noted for the remains of its abbey, which was originally built by ALWYN, earl of the East-ANGLES, in the 10th century. The tomb of *Alwyn*, with his image holding the keys and crooked staff, are among the curiosities of this venerable ruin. This tomb is considered to be the most ancient piece of English sculpture now extant.

This county is part of that district anciently inhabited by the *Iceni*, who extended their dominion also over the counties of *Suffolk*, *Norfolk*, and *Cambridge*. It was afterwards separated from that province, and became part of the "kingdom of *Mercia*."

Among the most eminent and distinguished persons of this county were, Sir ROBERT CORONER, a learned antiquarian, and founder of an excellent library, called after him the "Cottonian Library;" JOHN DRYDEN, the poet, whose harmonious numbers and masterly diction have scarcely yet been equalled; Sir OLIVER CROMWELL, elder brother to OLIVER, the usurper's father, whose loyal attachment to the Crown was such, that when under sequestration, he would not accept any favour through the interest of his rebellious brother. OLIVER CROMWELL, whose courage and great abilities, employed in a good cause, would have acquired as much renown as they did infamy in a bad one.

Population of the chief Towns.

Huntingdon	3,267
St. Ives ..	3,314
St. Neots.....	2,617
Kimbolton	1,584
Ramsey, and parish	3,006
Yaxley	1,140

This county sends four members to Parliament; namely, two for the county, and two for Huntingdon.



ισχύει πάλιν διὰ τὸν ὑπ' αὐτῷ δριζόμενον νόμον. Hippol. de Antichristo,

LOOKING at the FARM-YARD as a picture, it presents a pleasing scene, and also many objects to our view worthy of consideration; for we cannot contemplate the implements of husbandry, and the inhabitants of this inclosed space, without pleasure and gratification: if we observe the whole economy of the place, we shall see a simple rusticity in every part, that reminds us of primitive innocence, when to cultivate the earth was the chief employment of man; and we shall be constrained to acknowledge how much we are indebted to the country and the plough for our daily bread, and to the innocent sheep of the pasture for the covering that protects us from the inclemency of the weather. The contented husbandman, happy in his heath, repines not, that he has to endure the labour which fallen nature entailed on him, when Divine Wisdom declared, "By the sweat of thy brow shalt thou gather thy living;" he whistles to his team, carols to his work, and thanks his God with inward gratitude when he reaps the ripe grain, houses his harvest, or beholds the milkmaid drawing from the distended udders of the cows, the wholesome and strengthening milk that feeds and invigorates the human constitution. Times may have altered, but imagination calls to the memory the days when

"A little spot of earth well till'd,
A numerous family with plenty fill'd.
The good old man and thrifty housewife spent
Their days in peace, and fattened with content
Enjoy'd the dregs of life, and liv'd to see
A long descending healthful progeny;
The men were fashion'd in a larger mould,
The women fit for labour, big and bold,
Gigantic hinds, as soon as work was done,
To their huge pots of boiling pulse would run;

Fall too with eager joy on homely food,
And their large veins beat strong with wholesome blood."

DRYDEN, Jun.

How many lessons of morality may we draw from the sight of a Farm-yard; the watchful dog guards the approaches to the house, and tends his master's cattle, with a care and solicitude that would put to shame many a negligent person: the fine-plumed cock crowes aloud to raise the laggard from his slumbers, and proclaims the advent of day, and the call to industry and labour. The chuckling hen calls her chickens to the food which she scratches out for their sustenance, and spreads her wings to cover and warm them in her maternal embrace; such a scene as this is a page in Nature's volume on which the eye dwells with satisfaction, and from which may be extracted much philosophical information; and the more it is studied, the more interesting and entertaining will it become; we see in it not only the source of our support, and the supply of our natural wants, but we also behold the fountain and origin from whence our national greatness has sprung, and from whence it is still sustained. The seat of the highest dignity, the *Presidential BENCH* of the "House of Peers," is covered by the "*Woolsack*," an acknowledgment of what has been the staple commodity of commerce in this country, and that commodity, so valuable and so honoured, the timid sheep carry about with them till they yield it to the hands of their shearers. Long, very long, might we dwell on this subject, but as the eye and the mind may be gratified together, we leave it to silent contemplation, and the effect of the "*Picture*" we have given herewith.

BIOGRAPHY OF THE LATE SIR ROBERT PEEL.

WHEN a man is found occupying a distinguished station in society who emerged from comparative obscurity, it is natural enough to feel some curiosity respecting his origin, manner of life, and the incidents by which he arrived to that eminence on which he stands; such an inquiry has its peculiar benefits, as it shows by what gradations a person may attain to honour and fortune, who steadily pursues the path of industry and integrity. To relate the deeds of martial heroes, the patriotism of statesmen, or the labours of literary characters, may afford greater scope for the pen to indulge in panegyric, or to swell the theme into importance by the brilliancy of the details; but to draw from private life the familiar examples of excellency, or wisdom, is to give, though a less dazzling yet a far more useful lesson to mankind, and particularly to the rising generation; because it applies to the practical rule of life, and exhibits a copy that every one may follow, if so disposed. The victories of the warrior, the wisdom of the statesman, or the learning of the scholar, can only be obtained by few; they may be read of, wondered at, and greatly admired, but seldom imitated; because opportunities seldom occur, and one in an age, in the pursuit of fame, is as many as can be expected to succeed; on the contrary, the life of a private individual is a course that every one may follow: virtue and prudence are gifts that all may attain, but greatness may be sought for in vain.

The late SIR ROBERT PEEL was a character of the description we have now to depict, and whose example we have to offer as highly worthy of imitation; like himself, his father and grandfather were industrious manufacturers, the latter being originally established at Peelcross, in Lancashire, where the subject of our memoir was born, in the year 1750.

SIR ROBERT PEEL was educated entirely in the country, and only so far as was judged requisite to qualify him for business, and the active employments of life; he had not, therefore, the benefit of a classical education; yet, having a strong intellect, and an acuteness of mind, he became well versed in *history, geography, statistics, &c.*, by reading at his leisure hours books on those subjects, of which, it is said, he was particularly fond; and possessing a retentive memory, his mind was stored with information of far more practical utility than many who had devoted their whole time to the study of the learned LANGUAGES.

At the age of fourteen, SIR ROBERT was apprenticed to the cotton trade, and was made to apply to business, which he did with great attention, having then resolved on the aim of accumulating a fortune, and becoming the founder of a family, as he frequently declared to be his intention, and which declaration has been fully accomplished—a rare instance, indeed, of a resolution so early formed, being so steadily and inviolably kept, and the object so completely effected, since the years of adolescence and the ways of youth are so full of the snares that entangle them in the meshes of folly and pleasure.

That SIR ROBERT PEEL possessed from his infancy an original and happy union of genius and prudence, is manifest from the whole tenor of his life; and that he imbibed and retained much information from his reading, and his peculiar habit of reflecting on what he did read, is not to be doubted.

SIR ROBERT having finished his apprenticeship at the age of twenty-one, still continued his servitude for two years more—a proof that both the master and apprentice had been satisfied with each other's conduct and treatment.

At this time, the cotton trade was rather in a rude state, as the machinery of SIR RICHARD ARKWRIGHT had not been generally applied to the manufacture, and great opposition was made to its introduction, on account of superseding manual labour, and throwing the poor out of employment. The work-people were aware of the vast quantity that the machinery would supply, but they did not take into account the great demand that would be raised by the increased facility and superior ability of producing an article that would, by its cheapness, find a consumption at home, and a market abroad, a hundred times more extensive than before. A national benefit is not however always well understood, especially when the accomplishment thereof seems to threaten a permanent, or temporary disadvantage, to some particular persons.

SIR ROBERT PEEL first began the business of a cotton manufacturer in company with Mr. Yates, at Bury, in Lancashire, about the year 1773, and so well was this partnership conducted, that half a century saw it continued without interruption, and by due management, and the powerful effect of machinery, the concern has paid its founders and proprietors with princely fortunes.

SIR ROBERT married at rather an advanced period of life, being about forty; but whether it was a dislike to the cares of a family, or the desire to accumulate wealth, that kept him so long in a state of celibacy, does not appear: but his partner, Mr. YATES, had been married early in life, and had a dutiful and virtuous daughter, on whom SIR ROBERT placed his affections, and to whom he was married; making, in this instance, a like prudent choice, as he had always been accustomed to do in all former transactions in which he had been engaged.

This lady became the mother of the present SIR ROBERT PEEL, Bart., representative in Parliament for the borough of Tamworth, a gentleman who, to the foresight and firmness of his father, unites a highly-cultivated mind, by education and political experience. The late SIR ROBERT PEEL, whose biography we are now relating, was reported to be a kind-hearted and generous man, truly benevolent in his domestic capacity, and extending his urbanity and good-nature from that centre of affection to a large circle of friends and connexions: if vanity ever entered into his heart, it was by stealth, when the portal was thrown open to the sensibilities of parental tenderness, and when its presence there was scarcely to be considered an intrusion on the virtues of the mind; he loved his children, and felt the joy and pride of a parent at their promising excellences.

A great characteristic display of SIR ROBERT PEEL's general humanity, was his desire to render the condition of his work-people as happy as possible, and to make them good servants by being to them a good master; he saw and felt the hardships they had to endure, and the unavoidable sufferings that would occur from the unwholesome employment of the cotton manufacture, and he did all that he could to counteract the mischief by enjoining cleanliness, dry lodging-rooms, and the supply of wholesome food. Neither did he neglect their minds—he hired a schoolmaster to instruct them; he gave them time and opportunity to attend the public worship at their places of religious duty; and he observed, by his own example, and that of his family, that his benevolence was the effect of sincerity, and that his veneration for the Sabbath was by no means affected, but actually felt.

SIR ROBERT PEEL's great wealth, so honourably and industriously acquired, was not perverted to useless purposes, nor sordidly amassed to gratify the feelings of avarice. At his table he was hospitable, a liberal subscriber to public

charities, without any tincture of ostentation, and a patron to many valuable institutions. He was a Governor of Christ's Hospital, Vice-President of the Literary Fund, and a most munificent subscriber to the Charity for "Bettering the Condition of the Poor," to which Society he sent at one donation the sum of 1000*l.* His private charities were also many and liberal, particularly about his native place, at *Bury* in Lancashire, and Tamworth in Staffordshire, where the scenes of his life and fortunes had been mostly exhibited.

Temperance in youth, activity and prudence in manhood, and tranquillity in age, aided a manly and athletic form, which Sir ROBERT possessed in the preservation of life to an advanced age, even beyond a climacteric, and he resigned, about the age of fourscore, a life as full of honour as it was replete in years, rendering to posterity the benefit of his example, and by his excellent care and admonition, several valuable members of society in his progeny, and particularly his admirable successor in title and estate, the inheritor, we believe, also of most of his virtues, the present enlightened senator, Sir ROBERT PEEL, late Domestic Secretary of State, and now representative of the borough of Tamworth, a sketch of whose biography will probably appear in a future number of the "*Guide to Knowledge.*"

OF THE NATURE AND FORMATION OF SNOW.

WHATEVER is commonly before our eyes is usually regarded by us with less attention than it deserves to be. This is the case with Snow. We pass it by unaware of its wonderful formation, careless of its very great value, and only aware that it is very white and very cold. But an examination of a flake of snow, with the assistance of a microscope, will show to us that in its structure there are great beauty and great skill. It will show to us, in short, that like all the other works of God, it is exceedingly wonderful.

Where water is frozen the product is ice; a thick, solid, and slim transparent substance. A comparison between a piece of ice, however small, and a flake of snow, will speedily convince the reader of the very great difference between the substances of which they consist. Whence is that difference? The grand influence which forms ice is the same as that which forms snow. That influence is intense cold. But in the two cases the cold is exerted upon particles in a different state of cohesion. When aqueous^{*} particles are closely cohered in the form of water, the influence of intense cold upon them produces a solid and ponderous body; i. e. ICE. But when this description of particles is dispersed in vapours and greatly rarefied, they are changed by intense cold into frozen particles of a less dense coherence. The difference between the density of those particles which, when acted upon by cold yield ice, and those which, exposed to the same influence, yield snow, is this; the latter just twenty-four times lighter, bulk for bulk, than the former. The particles are only exceedingly rarefied as to their bulk; but the bulk also is exceedingly small. So small, indeed is it, that one such particle would present but a very minute object even when viewed with the powerful aid of the microscope.

How, then, the young and curious reader will exclaim, such being the case, can the mere action of intense cold present to our view large flakes of snow? The process by which this is brought about is, indeed, exceedingly curious; and, there-

fore, we will give a brief, and, of course, a faint, description of it.

Floating in the upper atmosphere, let the young reader imagine that he can see millions of minute drops, or points of vapour. Acted upon by intense cold, each of these drops or points is converted into a solid substance as fine as one of those little motes which we can sometimes see floating in the radiant sun-beams. As these descend lower and lower in the atmosphere they attract each other, and each flake of snow that we see glistening in virgin whiteness upon the ground, consists of a multitude of these minute atoms of frozen matter, cohering together with the most perfect and beautiful uniformity. Surely, when we perceive that even in a flake of snow so much ingenuity and design are perceptibly existent, we ought to keep our attention to surrounding objects perpetually upon the alert. Every thing of God's creation, however minute in itself or humble in the uses to which it is destined, is calculated to yield great pleasure to the attentive observer.

It is by an attentive observation of the works of the Almighty that we are the most certainly and effectually led into a truly pious frame of mind. We cannot pay attention to the innumerable wonders of the natural world without finding ourselves more able and more inclined, with every successive hour, to

"Look through Nature up to Nature's God."

This, indeed, is the most valuable end of all studies. All the other uses of knowledge have this one great defect, that they are temporary. But this great end of our studies is eternally useful: making us better fitted for the eternal favour of our Creator.

Even of merely temporal value, the pursuit of natural philosophy is abundantly productive; and youth, who indulge themselves in it, are never at a loss for the most refined amusement; an amusement which instructs as well as delights, and, unlike most other amusements, ne'er clogs and never leaves a sting behind it.

Of the use of snow we must speak in another chapter.

PRUDENCE.

NOTHING is more common than to hear people speak of others as being *lucky* or *unlucky*, *fortunate* or *unfortunate*; but rarely, indeed, do we hear the words *prudence* and *prudence*.

Yet, were it possible to enter fully and minutely into the history of the most prosperous and the most unprosperous men of any age or country, we should find, that much of what is commonly called good luck, is, in fact, the result of good judgment.

We do not assert that *all* good success arises from prudence, or that *all* failures are the consequence of imprudence.

Every day's experience proves to us, that there are accidents, and fatal occurrences, which no human sagacity could foresee, and against which, even if foreseen, no human precautions would be of any avail. "The battle is not always to the strong, nor the race to the swift;" and it is only for that Infinite Wisdom, which guides and preserves the UNIVERSE, to have absolute command over circumstances.

The highest degree of human prudence is insufficient to guard against all crosses and untoward accidents; but a very moderate share of it would be an ample shield with which to ward off all contingencies, excepting those which are so mighty overwhelming, as to appear to be especial judgments of Heaven.

PRUDENCE itself is sometimes the means of preventing a

* *Watery*, forming water.

man from rising to any eminent degree of success ; for that caution, which is the very soul of prudence, prevents its possessor from risking so rashly, or leaving so much to the decision of circumstances, as a more sanguine and less prudent person would do.

But let it be remembered, that if PRUDENCE sometimes prevents us from committing a fortunate hastiness, by which others have been raised to the very apex of their ambition ; so on the other hand, by keeping our attention constantly alive to contingencies and possibilities, it guards us against those terrible and disastrous turns of fortune, by which her confiding and uncalculating worshippers are dashed at one fell sweep from the height of human prosperity to the lowest abyss of hopeless and helpless human misery.

While we constantly exert all possible prudence in our worldly transactions, let us studiously shun that arrogant and ridiculous self-conceit, which would tempt us to attribute all our successes to our own prudent conduct, and all our mischances to misfortune : such conduct cannot fail to be offensive to HIM who balances the stupendous UNIVERSE, and upon whose breath the condition of all men and of all things depends.

THE CONVERSION OF ST. PAUL.

ST. PAUL, originally named SAUL, was a native of Tarsus, the metropolis of Cilicia *, a city of great reputation for its riches and learning. He was at first a PHARISEE †, by profession, a great persecutor of the CHRISTIAN CHURCH, and afterwards a disciple ‡ of JESUS CHRIST, and Apostle § of the GENTILES||. He is supposed to have been born about two years before our SAVIOUR, and according to St. Chrysostom ††, to have lived to the age of sixty-eight years.

St. Paul was early trained up to wisdom by the care and prudence of his father, from whom he received the rudiments of that education, of which he afterwards made so good a use in preaching the GOSPEL OF CHRIST. His father sent him early to Jerusalem, in order to study the law ; and for that purpose he was put under the care and tuition of GAMALIEL, a man of great eminence in that profession, and much celebrated for his wisdom and authority among the Pharisees, of which sect he seems to have been the head.

Under the tuition of this great master, St. Paul made so quick and surprising a progress in the knowledge of the LAW **, that he greatly surpassed his fellow-students, and soon recommended himself to the notice and observation of the chief men among the Pharisees ; who, thinking that a young man of his disposition and capacity would be a very proper person either to propagate or defend their religious

opinions, soon singled him out for that purpose, and took care to have him educated in the strictest of their principles. Thus accomplished, we find him very early appearing in the service of his masters, by consenting to, and probably being concerned in, the martyrdom of St. Stephen, as appears from his own words :—“ *When the blood of thy martyr Stephen was shed, I also was standing by, and consenting unto his death, and kept the raiment of them that slew him.* ” (Acts xxii. 20.)

This happened A. D. 33, a short time after our Saviour’s death. Immediately after the death of St. Stephen, St. Paul (or rather Saul), breathing nothing but slaughter and destruction to the Christians, and having received authority from the High-priest and Elders of the Jews to go to Damascus, with power to exercise his cruelty and zeal in such manner as he should think proper, departed for that city full of malice, and thirsting for blood.

Thus doubly armed with rage and authority, he set forward on his journey, intending nothing less than the total destruction of the Christians at Damascus. But the supreme providence of God, who can make the most wicked designs subservient to his infinitely wise purposes, thought proper to interpose at this juncture, as well on behalf of the distressed followers of the crucified Jesus, as in compassion to the misguided zeal of this their implacable persecutor. For as he was journeying on the road, about noon, and drawing near to Damascus, suddenly an amazing gleam of light darted from heaven, far exceeding in splendour the brightness of the meridian sun, accompanied with a voice, saying unto him, “ SAUL, SAUL, why persecutest thou me ?” Saul, together with his companions, in their confusion and astonishment, fell to the ground ; but the voice being only directed to him, he soon recollect ed himself sufficiently to reply, “ LORD, who art thou ?” To this inquiry he received an answer, import ing, that the person who spoke to him was no other than the crucified Jesus, whose church and saints he was then so cruelly persecuting ; and that it was in vain for him to act further in opposition to the determination of God’s providence ; that the Lord had appointed him to be a minister of that religion which he was so furiously endeavouring to suppress ; and that if he were not adverse to the Divine commands, the Almighty would assist and preserve him, and make him a great instrument in the conversion of the Gentile world.

The Apostle, upon this discovery of his Saviour, became obedient to the heavenly vision, diligently inquired His will and pleasure, and immediately followed the directions He at that time vouchsafed to give him. The extraordinary splendour of the light had, however, totally deprived him of vision ; so that he was under the necessity of being led to Damascus, from which he was not far distant.

At this time, there was in that city a certain disciple named Ananias, whom our blessed Lord, in a vision, commanded to go and find out Saul, and to cure him of his blindness. Ananias was startled at the name of the man ; and, to excuse himself, alleged his violent persecutions of the church, and with what wicked intent he was then come to Damascus ; but to this the vision replied, that he was appointed by God to be a powerful instrument in the propagation of the Gospel, both among the Jews and Gentiles, and that how much soever he had persecuted Christianity hitherto, he was now to become a zealous defender of it, and even to die in the testimony of its truth.

Saul continued blind for the space of three days, during which he employed his time in preparing his mind for a proper reception of those divine truths which were to be

* A district of Asia Minor, now forming part of Asiatic Turkey.
† One of a noted sect among the Jews, who were exceedingly zealous for the traditions of the elders. They made great pretensions to piety, and looked upon themselves as more holy than other men, and therefore separated themselves from those whom they thought sinners or profane.

‡ In a restrained scriptural sense, the disciples of Christ denote those alone who were his immediate followers, and attendants on his person, of whom there were seventy-two. In a general sense, it signifies a scholar, or one who professes the tenets of another.

§ An APOSTLE was one, who was an attendant and disciple of Christ on earth, and commissioned by him, after his resurrection, to preach the Gospel to the Gentile world.

|| A Gentile is one who worships idols or false gods.

¶ CHRYSOSTOM was a native of Antioch, and bishop of Constantinople. He died A. D. 407.

** By the term law is here understood the “ Law of Moses.”

revealed to him, and in which he was to instruct others. At the expiration of that time, ANANIAS, encouraged by the heavenly assurances he had received, repaired to the house where the convert lodged, and greeted him with the joyful message, " That the Lord Jesus, who had appeared to him on his journey, had sent him not only to restore his sight, but also to bestow upon him such gifts and graces of the Holy Spirit as might qualify him for the ministry to which he was then appointed."

No sooner had Ananias finished his salutations, than Saul recovered his sight, and was immediately initiated by baptism into the Christian faith; after which he made an open profession of that faith, by preaching publicly in the synagogues* of Damascus, and proving that Jesus was the Messiah.

After a short stay in this city, our Apostle retired into the neighbouring parts of Arabia, the desert, where he first planted the Gospel; and in the beginning of the following year he again returned to Damascus, and there preached Christ publicly in the synagogues, to the great astonishment of all the Jews, who were not a little amazed and confounded at the great change of his opinions and proceedings, and the powerful efficacy of his arguments and discourses. Incensed, however, at having lost so considerable a champion, they pursued him with the most inveterate malice, and contrived all possible means to destroy him, but without success; as he escaped from their snares by being put into a basket, and let down over the city wall, from which he made the best of his way to Jerusalem.

From this period, St. Paul devoted the remainder of his life in the propagation of Christianity, for which purpose he travelled throughout the greater part of the then known world.

The many labours and sufferings of this great Apostle, are so eloquently related by his biographer St. Luke, that it seems unnecessary to detail them here; suffice it to add, that he fell a martyr to his zeal, and that he was beheaded by Nero, Emperor of Rome. Thus died St. Paul, in the 68th year of his age, and in the 35th of his ministry; after having, with indefatigable labour and fatigue, triumphantly propagated the glad tidings of salvation to the most considerable and distant parts of the known world; discouraged by no difficulty, deterred by no opposition, nor terrified by the most severe sufferings; but constantly persevering in the good fight of faith, till he had finished his course, and obtained that crown of martyrdom which he had long ardently desired.

HISTORY OF THAMAS KOULI KHAN.

THAMAS KOULI KHAN, a man of very obscure origin, was a native of the mountains in the north of Persia, adjoining Khorassan.

This man, for whom fortune reserved a very singular fate, called NADIR KOULI,† is said to have been the son of a shepherd, who afterwards successively became a highwayman, the leader of a banditti, a general in the army, and KING OF PERSIA.

He was made General of PERSIA in 1729, revolted against his master in 1736, and having the army at his command, procured his deposition, and his own advance-

ment to the throne in 1737, under the name of NADIR SHAH.

He afterwards carried his ambitious views to the exterior, and marched to the conquest of India. The great MOGUL, grandson of the famous AURENGZEBE, was defeated, and DELHI, his capital, fell into the hands of the conqueror, who proclaimed himself Emperor of INDIA.

He now offered to reinstate the Emperor, on condition of receiving a ransom of *thirty millions sterling*; and after having had a conference with him, NADIR seized upon 200 cannon, with a vast quantity of treasure and jewels, which he sent off to CANDAHAR.

He then returned to DELHI, and while endeavouring to quell a riot, a musket was fired at him, whereupon he ordered a general massacre of the inhabitants, which his bloody troops instantly executed, and are said to have slaughtered 120,000 persons.

This was followed by an immediate seizure of all the *jewels and plate* which could be found, besides exacting the 30 millions, which was done with the utmost rigour, insomuch that many of the inhabitants killed themselves to avoid the tortures to which those were subjected who were not able to raise the money demanded.

During these horrid scenes, NADIR caused the marriage of his son to be celebrated with a *grand-daughter* of AURENZEB; and after having extorted all that he demanded, he restored the sceptre to the dethroned sovereign, and took leave of the Emperor with professions of friendship.

This bloody tyrant left DELHI on the 6th of May 1739, after massacring upwards of 200,000 people; when he returned to Persia with immense treasures, estimated at 125 millions sterling.

NADIR SHAH was assassinated in 1747; and his death re plunged Persia, for a time, in all the horrors of war, from which it had scarcely emerged, before the Tartars flew to arms, and rushed on the Persians with great impetuosity, but were nobly repulsed, when the Tartar army became dispersed, and spread themselves over the provinces, carrying with them the seeds of that tumult, confusion, and anarchy, which for a considerable time desolated that ill-fated country.

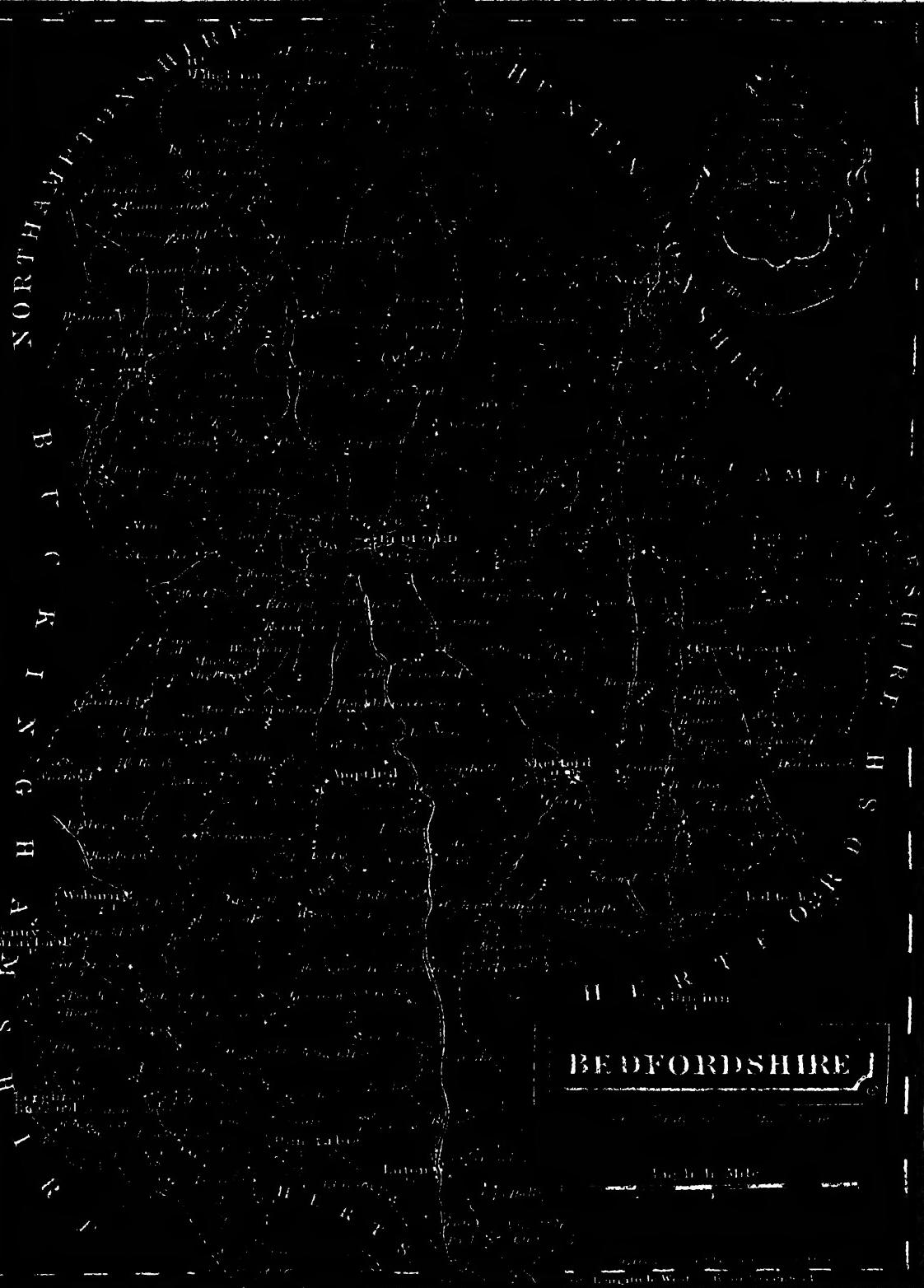
It afterwards became settled down into two kingdoms, called *Eastern* and *Western Persia*, or more properly PERSIA and AFGHANISTAN.

IF in the heat of summer we descend into a cave, we are sensible that we are surrounded by a cold atmosphere; but if in the rigour of a frosty winter we descend into the same cave, we are conscious of the presence of a warm atmosphere. Now a thermometer suspended in the cave, on these occasions, will show exactly the same temperature; and, in fact, the air of the cave maintains the same temperature at all seasons of the year. The body, however, being, in the one case, removed from a warm atmosphere into a colder one, and, in the other case, from a very cold atmosphere into one of a higher temperature, becomes in the latter case, sensible of warmth, and in the former, of cold.—Lardner's Cabinet Cycloedia.

* The public places of worship among the Jews.

† Kouli signifies lion.

No. XLV. GUIDE TO KNOWLEDGE.



BEDFORDSHIRE.

BEDFORDSHIRE is a small county in the diocese of Lincoln, and in the Norfolk circuit. It is supposed to take its name from its principal town, *Bedford*. It is bounded on the north by Huntingdonshire and Northamptonshire, on the east by Cambridgeshire, on the west by Buckinghamshire, and on the south by Hertfordshire. It is about 35 miles in length, 22 in breadth, and 90 in circumference. It contains 125 parishes, 10 market-towns, and 550 villages.

Its chief rivers are, the *Ouse* and *Ivel*. The former rises near Brackley in Northamptonshire, passes through Bedford, and falls into the *Wash*, in Lincolnshire. The *Ivel* rises in Hertfordshire, passes by *Baldock* and *Biggleswade*, and falls into the *Ouse*, a little above Tempstord. Both these rivers abound with fish. The *Ouse* is remarkable for its great and sudden inundations.

Its chief towns are, *Bedford*, *Biggleswade*, *Shefford*, *Dunstable*, *Woburn*, *Amphill*, *Leighton*, *Luton*, *Potton*, and *Toddington*.

The face of this county, for the most part, is prettily diversified, by being broken into small hills and valleys; nevertheless, it possesses several extensive levels. Its air is pure and salubrious. Its chief products are wheat and barley; and some parts of the county yield an abundance of fine timber. The agriculture of this county has been considerably improved by his grace the duke of Bedford.

BEDFORD, the county town, is a place of great antiquity. It is seated in a beautiful vale on the banks of the *Ouse*. It contains five parish churches, three on the north, and two on the south side of the river. During the Saxon heptarchy were interred here the remains of *OFFA*, a powerful prince of the *Mercians*. Here are also five meeting-houses of different denominations, a chapel for Moravians, a town prison, a new county jail, an infirmary, and a lunatic asylum. *Bedford* is noted as the birth-place of Sir *WILLIAM HARPER*, Lord-mayor of London in 1561, who bequeathed, at his death, a legacy for the endowment of *Bedford Free Grammar School*. The annual revenue which supports this school, and some other laudable charities, is now many thousand pounds. The celebrated *JOUN BUNYAN* wrote his "*Pilgrim's Progress*" whilst in prison here. He died in 1688; *Bunyan* was a brazier of *Bedford*. *Bedford* is distant from *London* by *Flatfield* 50 miles, and by *St Albans* 51 miles.

DUNSTABLE stands on a dry, chalky eminence, on the great Northern road. It is noted for its straw manufacture, and for larks, which are said to be the largest and best in the kingdom. The hill on which *Dunstable* is seated forms part of a long ridge of hills, called the "*Chilterns*." The glory of *Dunstable* was its once celebrated priory, which was founded by King *HENRY I.* to the honour of St. Peter, whose yearly revenues amounted to 344*l.* 13*s.* 3*d.* The centre of this town was formerly adorned with one of those beautiful crosses erected by *Edward I.* to the memory of his Queen *Eleanor*. This town is famous for its straw-plat.

Dunstable is 9 miles from *Woburn*, and 34 from *London*.

The unjust sentence of Divorce against *CATHERINE*, wife of *Henry VIII.* was pronounced here by *Archbishop CRAMER* in 1553.

LUTON is a small town seated on the river *Lea*. It has nothing worthy of note except its fine gothic church. Ancient records mention that part of this town was given by King *OFFA* to the monks of St. *Albans*, but the patronage of the church was not an appendant to the gift. It is also noted as the birth-place of *POMERI* the poet.

BIGGLESWADE is a considerable town in the high road from *London* to *York*. It is seated on the *Ivel*, and is 10 miles from *Bedford* and *Hitchin*, 8 miles from *Baldock*, and 48 from *London*.

LEIGHTON, a considerable town, is seated on a branch of the *Ouse*, called *Onsell*, and is noted for its market for cattle.

AMPTHILL, a small town, is noted for having been the residence of *CATHERINE*, wife of *Henry VIII.* during the time her unjust divorce was in contemplation.

WOODEND, near *Teddington*, was the seat of *SIR SAMUEL LUKE*, who is generally supposed to be the hero of that witty poem, "*Hudibras*."

WOBURN was formerly famous for its abbey, now the seat of the duke of *Bedford*. Near this town is found vast quantities of *fuller's-earth*, which is of great value in the woollen manufacture. Nearly the whole of *Woburn* belongs to his grace the duke of *Bedford*. No one has profited so greatly by the general dissolution of monasteries as the family of *Russell*, whose fortune principally originates from gifts of this nature. To the grant of *Woburn* it owes much of its property in *Bedfordshire* and in *Bucks*; and to that of the rich abbey of *Tavistock*, vast fortunes and interest in *Devonshire*. No house in *Britain* has thriven more than that of *Russell*. The gift of *Thorney Abbey* gave him an amazing tract of fens in *Cambridgeshire*, together with a large revenue. The priory of *Castle Hymel* gave him a footing in *Northamptonshire*, and portions of the appurtenance of *St. Albans*, and *Mountgrace*, in *Yorkshire*. To the above are to be added the estate about *Covent Garden*, with a field adjoining, called the "*Seven Acres*," on which *Long Acre* is built; with some other grants of less note. *Woburn Abbey* (the seat of the duke of *Bedford*) is one of the most elegant in *Europe*.

Among the most distinguished persons of *Bedfordshire* were *SILVESTER DE EVERDON* (so called from the place of his birth), *bishop of Carlisle*, and *Lord Chancellor* in the reign of *RICHARD the Third*. At the same place also, was born the famous and learned *JOHN TIROFT*, *earl of Worcester*, and *Lord High Chancellor of England* in the reign of *Edward IV.*; *RICHARD EDES*, *dean of Worcester*, and *FRANCIS DILLINGHAM*, translators of the *Bible* into *English*, were both natives of this county, as were also *THOMAS NORTON*, one of the versifiers of the *Psalms*, and *JOHN BUNYAN*, the author of the "*Pilgrim's Progress*."

Population of the chief Towns.

<i>Bedford</i>	6,959
<i>Amphill and Parish</i>	1,688
<i>Biggleswade and Parish</i>	3,226
<i>Dunstable</i>	2,117
<i>Leighton</i>	3,330
<i>Luton</i>	3,961
<i>Potton</i>	1,768
<i>Toddington</i>	1,926

Bedfordshire sends four members to parliament; namely, two for the county, and two for *Bedford*.

NAPOLEON MAXIMS.

When the bulk of a nation is corrupted, the laws are useless without despotism.

We must confess that fate, which sports with man, makes merry work with the affairs of this world.



ST. PAUL'S CATHEDRAL.

THE great fire of London, which at the time of its occurrence seemed an irreparable calamity, proved by its consequences one of the most merciful dispensations of Providence that had ever happened to any nation.

Before this extensive conflagration, the streets of London were narrow, ill-paved, and dirty; the houses were unsightly structures, built chiefly of timber, and the upper stories of many of them projecting so as almost to meet over head.

The consequence of this state of things was, that contagious diseases frequently ravaged the city, engendered by the want of a due circulation of air, and sufficient attention to cleanliness. Not long before this destructive fire, London had been almost depopulated by the plague; but since that occurrence, no symptoms of that terrible disorder have appeared.

Wisely was it determined by the government of the country to rebuild London on a more eligible plan; and though great difficulties arose in consequence of the opposition of the landed proprietors, their resolutions were carried into effect. Wide and regular streets arose in the room of gloomy mean alleys, which before disgraced the Metropolis; broad and convenient footpaths, and well-paved carriage-ways, succeeded to the mazy tracks of former days; and spacious sewers and drains carried off the filth which before accumulated in the streets.

But these were not all the advantages derived from this apparent calamity. The noble Cathedral of St. Paul, a magnificent monument of national taste and liberality, owes its erection to the same memorable event. The old Cathedral was a spacious Gothic edifice, no doubt an ornament to

the city, but not perhaps to be compared with its classically beautiful successor. (*See the Engraving below.*)

The present Cathedral is not built according to the first design of its great architect. It was his wish to have erected a temple after the model of some of the purest structures of ancient Greece, but the form of a cross being considered as essential to a Cathedral, he was constrained to depart from his original design, and to adopt one more suitable to that form.

The first stone of this noble edifice was laid by Sir Christopher Wren himself, June 21, 1675. As the church of St. Peter at Rome had occupied one hundred and forty-five years in building, during which eighteen Popes had successively filled the Pontifical throne, Sir Christopher could scarcely flatter himself with the expectation of seeing the completion of his undertaking, yet it is a remarkable fact, that it was begun and finished by one architect, and one master mason, and under one bishop of London.

An encouraging omen is said to have occurred soon after the commencement of the building, for Sir Christopher, while making out the dimensions of the great cupola, having called for a flat stone to use as a station, the workmen brought him the fragment of a tombstone, on which was the single word "Resurgam." It is probable that this circumstance is commemorated by the figure of a phoenix rising from its ashes, inscribed with the encouraging word, which is placed over the south portico.

Although St. Paul's is far inferior in magnitude to St. Peter's, yet, even with this consideration, the time occupied in its erection, thirty-five years, was remarkably short. But no diligence on the part of the architect could satisfy the

impatience of some in power. By an Act of Parliament, passed in the 9th of William and Mary, a moiety of the salary of Sir Christopher was suspended, thereby the better to encourage him to finish the same with the utmost diligence and expedition.

The situation of this Cathedral is commanding, being nearly in the centre of the Metropolis, and on an eminence of considerable height. Should the improvements that are now in contemplation be executed, the approach to it, and the space around it, will afford uninterrupted views of its magnificent façades.

The architect, having been compelled to adopt the shape of a cross, has skilfully obviated the unclassical appearance such a form would have presented, by adding a transept at the west end, thus giving that front due breadth, and by inserting square masses into the angles of the cross, to support the vast dome or cupola that crowns the work.

The dimensions of this Cathedral are great, though much inferior to that of St. Peter's at Rome; its extreme length is 510 feet, its external breadth 282, and its height to the top of the cross 404; but it owes its principal claim to rank among the noblest edifices in the world to the grandeur of its design, and the beauty and elegance of its proportions.

The north, west, and south fronts are adorned with porticos. That on the west, which embellishes the principal entrance, is of elegant design and admirable execution, consisting of twelve lofty Corinthian columns below, and eight of the composite order above, surmounted by a handsome pediment, on the tympanum of which the conversion of St. Paul is represented in basso relief. On the apex of the pediment is a colossal statue of that Apostle, and on other parts of the building are similar statues of St. Peter and St. James, and the four Evangelists.

The west front is likewise ornamented with a lofty steeple at each end, of light and elegant architecture, in one of which is the clock, which strikes on a bell of enormous size, and consequent great depth of tone.

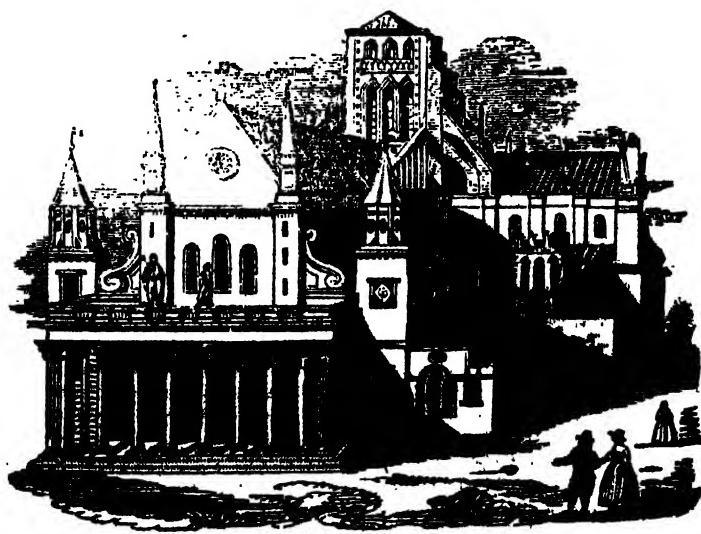
The great dome in the centre is remarkable for the beauty of its shape, and the elegance of its proportions. A plain circular basement rises from the roof of the church to the height of twenty feet, above that there is a colonnade, consisting of thirty-two Corinthian columns; these are crowned by a complete entablature, and surrounded by a range of pilasters; from the entablature of these pilasters springs the dome, round an aperture of which is a gallery; from the centre of this gallery rises an elegant lantern, surrounded by Corinthian columns, and surmounted by a ball and cross, richly gilt.

The interior corresponds in beauty with the exterior; although before its sumptuousness was broken by the erection of statues and monuments, it had an air of heaviness. These monuments are of various degrees of merit, but few are of so great excellence as to add much to the national fame.

It is to be lamented that the interior of the dome had not been decorated with Mosaic, instead of the paintings of Sir James Thornhill; for however great may have been, originally, the merits of this work, it is now in a very decayed state, and will soon be entirely obliterated. Mosaic is of almost an imperishable nature.

Within the dome is a gallery, denominated the whispering-gallery, from the circumstance of the lowest whisper uttered with the face to the wall on one side, being audible at the other, a distance of 140 feet. A knowledge of the science of Acoustics will enable any one to explain this phenomenon.

The view from the summit of St. Paul's, on a clear day, is such as can scarcely be paralleled in the world—the immense extent of London, with its innumerable towers and spires, the river winding in diminished majesty, and the busy throng in the streets below, with the numerous carriages of various descriptions hurrying to and fro, but of very little size, give almost the idea of a fairy scene.



ST. PAUL'S BEFORE BEING BURNED.

MEMOIRS OF EMINENT ENGLISH ARCHITECTS.

INIGO JONES.

PREVIOUS to the time of the celebrated architect whose life we are about to record, the principal buildings of this country were erected according to the Gothic, Saxon, and Norman styles, castellated, religious, and domestic : these styles, for they cannot be termed *orders*, were chiefly useful for their strength and massiveness ; qualities which more secure and peaceable eras than those in which they prevailed did not require, while at the same time their gloom and frigidity were repulsive to the cheerful dispositions of a people whose freedom was established, and whose internal peace was sufficiently protected by the laws. On these accounts, they have long since fallen into disuse, the *Gothic* (falsely so termed) alone being occasionally revived for the erection of religious edifices, to which it is peculiarly appropriate, and of which some splendid specimens have of late years been produced : it is, therefore, unnecessary for us to record the memoirs of architects of any period prior to the reign of James I., when the subject of this sketch adorned his native country with his magnificent buildings, although the Gothic eras may justly boast of mighty works and of eminent men, among whom the celebrated William of Wykeham deserves no mean rank.

Inigo Jones was the son of a cloth-worker of London, and was born in the neighbourhood of St. Paul's, in 1572. The trade originally designed for him by his father was that of a joiner, to which he was accordingly apprenticed at a suitable age. This business required some skill in drawing, the study of which elicited the true bent of his talents and inclinations, which intuitively tended to the art of designing. Accordingly, we find that he very soon neglected the mechanical part of his intended occupation, and distinguished himself by his extraordinary progress in the graphic art, especially in landscape painting, a specimen of his skill in which is extant at Chiswick-house, the seat of the duke of Devonshire.

His genius and attainments in this art speedily acquired for him the notice and patronage of William, Earl of Pembroke, or, according to some authors, of the earl of Arundel. This uncertainty is immaterial, but a strong support to the opinion of those who assert that it was the former nobleman is, that, at a later period of Jones's life, we find him employed by him at the noble seat of the Pembrokes at Wilton, near Salisbury.

Be it, however, as it may, he was sent abroad, by his patron, with a liberal pecuniary allowance, for the express purpose of completing his studies in drawing and painting. At the expense of the earl, our young student travelled over Italy, and the polite countries of Europe, examining all the precious remains of antiquity, and the various schools* of painting, and acquiring rich funds of observation, which he afterwards perfected by study.

But on his arrival at Rome, his aspiring genius was suddenly overwhelmed with admiration, and fraught with entirely new feelings. The glorious light of a superior ambition burst upon his astonished mind ; he felt that he was destined to produce works of a more vast, useful, and imperishable nature than the emanations of the pencil and the pallet ; and that instead of merely adorning cabinets,

* The word *school* as applied to the delineative art, must never be taken to imply an *assemblage* of scholars, or students in any given place, but as denoting the style of a certain era or mode of painting. Thus we say, the *Italian*, the *French*, the *Flemish*, the *English school*; the *school* of *Raphael*, of *Titian*, of *Vandyke*, &c.

nature had intended that he should erect palaces. In short, his whole faculties were directed to the noble science of architecture, and all his energies were employed in its attainment. From this period, therefore, we entirely lose sight of the humble joiner, observe the draughtsman absorbed in the designer, and hail the vigorous and classic architect.

On arriving at Venice, he viewed with delight the beautiful works of Palladio,* in which all the elegance and simplicity of the ancient building were rendered applicable to the practical purposes of domestic use, and the classic splendour of the antique was adapted with the purest taste. Here, then, he for a considerable time fixed his residence, diligently studying the labours of that great architect, whose style he copied, and whose fame he afterwards in some measure rivalled.

It is not known in what manner his abilities distinguished themselves in Venice, where he certainly had no opportunity of acting ; it is curious, therefore, how his reputation became so advanced during his stay at that city : certain, however, it is, that he acquired so much fame, that Christian IV., king of Denmark, was induced to send for him, and to appoint him his architect. What buildings he erected in that country are not recorded.

Mr. Jones continued some time in this honourable capacity, until, in the year 1606, the Danish prince, whose sister Anne had been espoused by James I., paid a visit to England. The architect, therefore, took the opportunity of returning to his native country in the suite of the monarch.

Shortly after his arrival, the queen appointed him her architect, and her example was soon followed by Prince Henry, under whom he discharged the duties intrusted to him with such judgment and fidelity that the king conferred upon him the reversion of the place of surveyor-general of his Majesty's works.

On the untimely and suspicious death of Prince Henry, in 1612, Mr. Jones paid a second visit to the continent, and continued some years in Italy, still further improving his knowledge of his favourite art, until the surveyor-general's office became vacant, when he returned to England, and entered upon its duties.

According to Mr. Walpole, it was during the interval between his two continental travels, that Mr. Jones erected those buildings of his which are so deficient in taste and purity of design, and border so much on a bastard style of Gothic, which he reformed in his latter works.

On his assuming the office of surveyor-general, it was found that, during the time of his predecessor, the debt contracted for his Majesty's works was very considerable. The privy council sent, therefore, for Mr. Jones, to consult with him how they might best ease his Majesty in this strait ; whereupon, with the most disinterested generosity, he not only relinquished all the emoluments of his office until the arrears should be cleared, but

* ANDREA PALLADIO, a celebrated Architect of the 16th century, was a native of Vicenza, in Lombardy, and the disciple of Trissin. He executed exact drawings of the principal works of antiquity at Rome, added commentaries to them, and published them : the work went through several editions. But his most eminent publication was a *Treatise on Architecture*, in four books, which he printed in 1570. Upon this treatise Inigo Jones afterwards wrote some very excellent remarks, which were published in an edition of Palladio's works by Leoni, in 2 vols. fol. 1742. Palladio deeply studied the purest classical models, and succeeded in combining their elegance and simplicity with modern domestic convenience. He adorned Venice with many magnificent structures, and was indeed the founder of a new school of architecture, of which Inigo Jones, and his successor, Sir Christopher Wren, were distinguished disciples.

prevailed upon the comptroller and paymaster to follow his example, by which means the debt was soon discharged.

The most brilliant part of our architect's career now commenced. The magnificence of James's reign, in dress buildings, &c., afforded ample scope for the display of his talents. Accordingly we find him engaged in drawing the designs for a new palace at Whitehall, the erection of which was commenced upon his plan, in 1619.

The old palace having become ruinous, James determined to rebuild it in a most princely manner. In pursuance, therefore, of this intention, Jones prepared plans from which the part of the intended edifice which is now called the *Banqueting-House*, was executed by Nicholas Stone, the king's architect. This building was finished in two years, at a expense of 17,000*l.*, and was the only portion completed of a vast plan, of which the unhappy events of the next reign prevented the execution. The palace, according to Jones' designs, was to have consisted of four parts, within a large central court, and five lesser ones; between two of the latter, a beautiful circus, with an arcade below; the intervening pillars ornamented with caryatides. The length of the palace was to have been 1,152 feet, and its depth 874 feet.

The genius and talents of Jones are clearly evinced by that part of the building which now exists, which is so complete in itself, and such a model of the most pure and beautiful taste, as causes every lover of the arts deeply to regret that so glorious a design was never completed.

In 1618, a special commission had been issued to the Lord Chancellor, the Earls of Arundel, Pembroke, and Worcester and others, to plant, and reduce to uniformity, Lincoln's Inn Fields, in such manner as Inigo Jones should direct, by the map or ground-plot which he was to draw for the purpose. This design he executed, observing a puerile singularity in laying out the square, by making its area of the exact dimensions of one of the Egyptian pyramids.

In 1620 we find him employed on a subject very unworthy of his genius; King James having imposed upon him the task of endeavouring to discover the origin and founders of Stonehenge. This he diligently set himself to perform, and having with great trouble and expense exactly measured those extraordinary remains, and examined the foundation, in order to ascertain the original form and aspect, he proceeded to compare it with other ancient edifices which he had seen. All his favourite ideas and tendencies being decidedly Roman, the result of his inquiries was, that he pronounced this venerable relic to have been originally a ROMAN TEMPLE, dedicated to *Bælus*, the oldest heathen god, built after the TUSCAN ORDER, and probably erected between the time of Agricola's government and the reign of Constantine the Great! This account, which can certainly be considered only as a very wild imaginative speculation, he presented in the same year to his royal master, and was immediately appointed one of the commissioners for repairing the Cathedral of St. Paul, in London. This work was not, however, commenced till the year 1633.

In 1623 he was employed in fitting up a chapel at Somerset-house, for the Spanish Infante, the intended bride of Prince Charles.

After the death of James I., Mr. Jones retained his offices under both the King and Queen. His fee as surveyor was eight shillings and fourpence per diem, with an allowance of forty-six pounds per annum, for house-rent, besides a clerk and incidental expenses. What greater rewards he received are not recorded.

In June, 1633, an order was issued, requiring him to commence the reparation of St. Paul's, whereupon Laud,

then bishop of London, laid the first stone, and Jones the fourth.

In this great work he committed two egregious errors. The edifice being a Gothic structure, he first renewed the sides with very bad Gothic, and then added a Roman portico, which, however magnificent and beautiful in itself, had no sort of relation to the architecture of the building; and, moreover, rendered the appearance of his own Gothic ten times heavier than it otherwise would have been.*

Mr. Jones was indeed by no means successful in any of his attempts at Gothic architecture, and probably his sense of this led him to commit those incongruities which disdained his judgment and taste, in introducing classical compositions into Gothic structures. A remarkable specimen of this inconsistency remained, till very lately, in Winchester Cathedral, into which noble pile he had thrust a screen in the Roman or Grecian taste, which, although an elegant proof of his genius, was a perfect anomaly in a Gothic edifice, and was indeed fitter, as Dr. Milner justly remarks, for a tavern than a cathedral. It has, however, lately been removed, and its place supplied by a very pleasing imitation of the style which prevailed in the fourteenth and fifteenth centuries.

The genius and fancy of Mr. Jones were not, however, confined to architecture, and his talents found frequent exercise in lighter employments, by reason of the taste and magnificence which were displayed in the pleasures of the court during the prosperous state of King James's affairs. To the amusements of that reign, poetry, painting, music, and architecture, respectively lent their aid, and joined in making them rational diversions. Thus was fostered that passion for masques and interludes, which at that time so much prevailed; and the construction of the pompous machinery necessary in their representation, afforded frequent exercise for Mr. Jones's ingenuity. Indeed, in these splendid pageants, the invention of the scenes, ornaments, and costumes, always fell to his share.

The subject of the masque was chosen by the poet, who also composed the speeches and songs. Ben Jonson was the laureat; Inigo Jones the inventor of the decorations; Lanier and Ferabosco composed the symphonies; and the King, the Queen, and the young nobility, danced in the interludes. *

These entertainments, termed *masques*, were introduced by Anne of Denmark, consort of James; and a folio volume is still extant containing designs for the habits, masks, scenes, &c. for these solemnities, of Jones's own drawing.†

In the construction of these diversions, our architect and Ben Jonson for some time acted in harmony; but, in 1614, a quarrel arose between them, in which, although it is not recorded who was the aggressor, yet we find that the turbulent temper of the laureat took care to be most in the wrong, since, even till his death, he continued the rupture, and, not content with ridiculing his opponent, he loaded him with the grossest and most virulent abuse; conduct which is anything but an evidence of a good cause, and which, indeed, drew upon him the just censure of the court.

In the meantime Mr. Jones acquired a handsome fortune from the encouragement which he received from the court; which, however, was much lessened by his misfortunes during the rebellion. Having shared in his royal master's prosperity, he was destined also to participate in his reverses.

Upon the meeting of the Long Parliament, in November, 1640, he was vexatiously summoned before the House of peers, upon an unjust and frivolous charge, by which prae-

ection he was put to a great expense; and in 1648, during Cromwell's usurpation, our architect being a Roman Catholic, and having also been a royal favourite, was obliged to compound for his estate as a malignant, at the price of £450.

After the death of Charles I. he was continued in his post by Charles II., but his sovereign being himself at that time an outcast from his throne, the surveyor's office was but an empty title. Nor did Mr. Jones survive long enough to enjoy better days, for the grief occasioned by the murder of his former munificent master, added to his misfortunes and his age, put an end to his life, July 21, 1651-2.*

The attainments of Inigo Jones were not confined to mere professional knowledge, since we are assured, by one who knew him well, that he possessed a knowledge of the Greek and Latin languages, especially of the latter, and surpassed most of his age in scientific abilities. He was a complete master of mathematics, and had a taste for poetry; some verses by him having been published in the "Odeonbian Banquet," prefixed to Coryate's "Crudities," in 4to, 1611.†

But it is as an architect that his fame was established and upon that character it must rest. He was decidedly the most eminent in that science of his time, the art of designing having been but little known in England until he brought it into use. On these accounts he has been sometimes styled the British Vitruvius; and he must certainly be considered as the founder of regular architecture in this country; for, notwithstanding some slight appearances of the Italian school began with John of Padua and Holbein, under the patronage of Henry VIII., yet at that time architecture had only begun to revive in Italy itself, and nothing whatsoever was designed or erected by either of them which could in any degree compete with the Banqueting-House of Whitehall, or the church of St. Paul, Covent Garden, two of the noblest works of Jones.

Many magnificent houses were indeed erected during the reign of Elizabeth, but the Gothic had then so far degenerated, that they lost all the beauty of that style, without being by any means benefitted by the dawning taste for a more classical one: consequently the buildings of the reign were remarkable only for extreme heaviness and clumsiness in the general appearance, which was rendered still more so by cumbrous ornaments, devoid both of grace and proportion.

In this state, then, was architecture, till Inigo Jones appeared, bringing with him triumphantly the result of his profound studies of classical models in the Palladian school, by which he at once established his claim to be considered as the founder of the Italian style in his native country.

The principal works of Jones which are still in part extant are, Whitehall; the new quadrangle of St. John's College, Oxford; the Queen's Chapel at St. James's; Gunnersbury, near Brentford; Lincoln's Inn Chapel; and one or two of the houses in Lincoln's Inn Fields; Coleshill, in Berkshire; Cobham Hall, in Kent; the Grange, in Hampshire; the Queen's House at Greenwich, &c. &c.; Ambresbury, in Wiltshire, was designed by him, but executed by his scholar, Webb. Mr. Jones also built the noble front of Wilton House, the seat of the Earl of Pembroke, and drew a plan for a palace at Newmarket, but it was not carried into execution. He was one of the first that observed the same diminution of pilasters as in pillars.

G. B.

* Chalmers' Biog. Diet. English Encyclopedia.
† Chalmers.

Walpole.

BIRDS OF PREY.

As there are beasts and fishes, so also there are birds of prey. The largest, fiercest, and rarest of these is the Eagle, which is the king of the birds, as the lion is the king of the beasts. So powerful are the eyes of this bird, that he can soar so high in the air as to be beyond our sight, and though gazing all the while upon the meridian sun, remains unjured and undisturbed by his intense ardour and brilliancy.

The Vulture and the Raven, though much inferior to the Eagle in size and strength, live upon dead and corrupting animal bodies, which are called carrión.

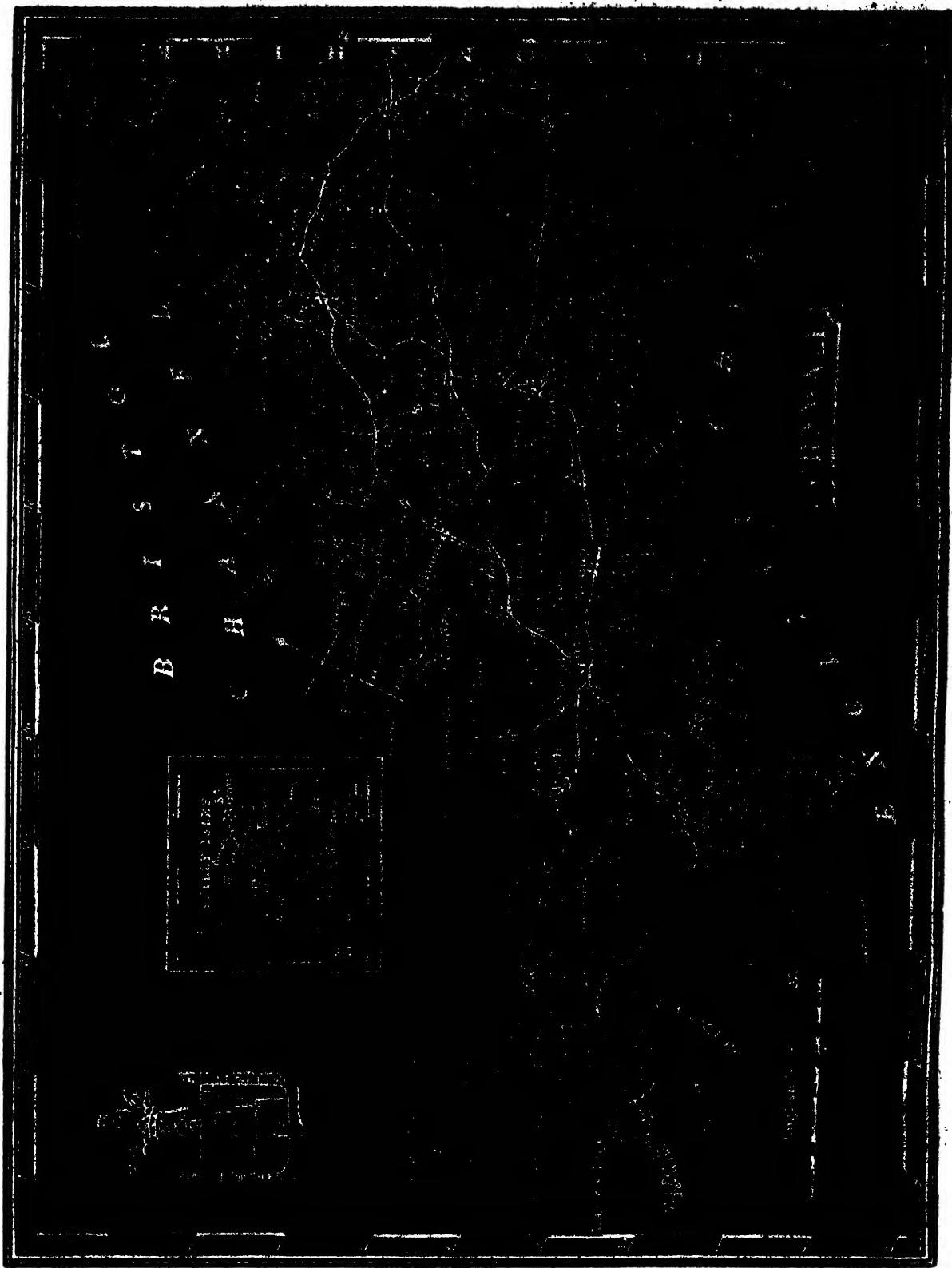
Kites, an exceedingly greedy bird, with long and bare legs, of a dirty-yellow colour, do not, unless much pressed by hunger, care to eat carrión. But they are extremely mischievous by their propensity to stealing poultry. They are so strong in their talons, that they can with ease carry away in them a full-grown domestic fowl. There is a small, but extremely bold kind of falcon. This bird, diminutive as it is, scarcely yields to the eagle in ferocity and rapacity. He lives by tyrannising over and devouring the smaller kinds of birds, as sparrows, wrens, goldfinches, and the like. He is upon this account called the Sparrow-hawk.

The larger kinds of Falcon attack the larger birds. Formerly they were trained to catch them, and bring them to sportsmen. This manner of obtaining game was called hawking or falconry, and was so generally admired that no gentlemen, and but few ladies, ever rode out for pleasure without having one or two falcons resting upon their own wrists, or upon those of their attending servants. But this kind of amusement is now wholly discontinued.

INTRODUCTION OF POTATOES AND CHERRIES INTO IRELAND.—From Sir Walter Raleigh's constant employment in England it was scarcely to be expected that he would personally devote much time to the improvement of his Irish estates. Yet it is a remarkable point about this eminent man, that wherever he had settled, or his influence extended even for a short period, he has left some traces of his usefulness and activity. At Youghall, in the county of Cork, of which town he was mayor, and where his house and gardens are still seen, the first potatoes ever planted in Ireland were introduced by Raleigh, who had brought them from Virginia; and he is also said to be the first propagator of the cherry in that island, which was imported by him from the Canaries. At Lismore, which formed part of the extensive grant made to him by Elizabeth, we find a still more interesting memorial in free-school which he founded: and the large and beautiful myrtles in his garden at Youghall, some of them twenty feet high, are associated with the love of shrubs and sweet-smelling plants, and that elegance of taste in his rural occupations which remarkably distinguished him.—*Edinburgh Cabinet Library, No. XI.*

BEAUTY AND UNIVERSALITY OF THE FRENCH LANGUAGE.—It appears from a remarkable fact, that, even in the 13th century, the French was regarded by the Italians themselves as a far more classical tongue than their own. For Brunetto Latini, the master of Dante, originally composed his book called the *Treasure*, at Paris, and in French, as appears from a manuscript which I have seen in the hands of a learned and ingenious friend. And he positively observes that he wrote in French, as being a more elegant language, and more widely understood.

NO. XLVI. GUIDE TO KNOWLEDGE.



CORNWALL.

CORNWALL, the most western county in Great Britain, is bounded on all sides by the sea, except towards the north, which is separated from Devonshire by the river Tamar, and an artificial boundary a few miles to the south of its northern extremity. It is bounded on the west by the Bristol Channel, on the east by the English Channel, and on the west by the Falmouth. It is divided into 9 hundred, and contains 27 market towns, 161 parochial churches, and 1,300 villages. It is about 80 miles in length, 50 in breadth, and 230 in circumference, and lies in the province of Canterbury, and diocese of Exeter.

CORNWALL, though rocky and mountainous, and in appearance one of the least inviting counties in England; the valleys furnish excellent pasture, and the land, contiguous to the sea, is impregnated with sea-weed, and a fat kind of sand, which produces great fertility; but the saltiness of the atmosphere, and the violence of the winds, are unfriendly to plantations, trees, and even shrubs, so that the country wears a barren and desolate appearance. The air of Cornwall, owing to the large body of surrounding water, is extremely moist; and the clouds being interrupted in their passage, by the high lands in the centre of the county, occasion frequent showers of rain, and fog incessant. Snow, however, seldom lies long in Cornwall, frost is of short continuance, and a storm of hail a phenomenon. Although the showers of rain are sometimes severe, they are seldom of long duration, and may be considered as very conducive to the health of the inhabitants, by clearing the air of the pernicious vapours arising from the various operations to which the *ores* are subjected in the process of refining. This county is chiefly noted for its mines of tin and copper, and from early antiquity these were objects of commerce to civilized nations, while Britain was in a state of barbarism. Hence, agriculture in Cornwall is only a secondary pursuit; for although in some districts there is a greater quantity of grain raised than is sufficient for the use of the inhabitants, yet the produce is often insufficient to meet the demand. The application of the land is from arable to pasture, alternately; the former is sown with wheat, barley, and oats, as long as it will bear any, and it is then converted into pasture, until its strength is recovered, and it is again capable of producing corn. The most important mines in the history of this country are 130 hundred mines, which have been observed, which, for many centuries, have furnished employment to thousands of its inhabitants; and in several ages constituted, by their produce, the chief source of the commerce of GREAT BRITAIN. The towns of Cornwall are very numerous, and the quantity produced is not greater than in any other part of the world, and will always be an object of great consequence, both in domestic and foreign commerce. The miners have peculiar laws and privileges, and all matters relating to them are determined in courts called *Statuary courts*, with a progressive appeal to the Vice-Warden, Lord Warden of the Stannary of Cornwall, and from the latter to the Duke of Cornwall. In ancient times, it is much questioned whether the Romans ever made a complete conquest of this part of Britain; which likewise made a noble stand against the SAXONS; and, together with the Welsh Princes, defeated, in a pitched battle, King

Ethelred, had driven him beyond the Humber.* But in the year 633, we find them greatly vexed by the Saxon King, Edgar, who, having subjugated Northumbria, also advanced with a strong army into Cornwall, and, after a severe battle, gained the victory. It is said that he left behind him a stone, which is a source of revenue to the miners, and which is still preserved, to witness the fact of the Conquest. The river Fal is supposed to receive its name from the word Fal, which means water, the course of the river being through the marshes of Falmer, and is one of the streams which form the river Tamar, in the west of Cornwall. The Fal is a small river, which, in the northern district of the county, receives the river Fowey, which winds its course between numerous marshes, and falls into a splendid basin, called the Fowey Bay, a very large portion of the British Isles lying back to it. The Fal flows by Fowey, and falls into a numerous stream at Falmouth, whence its name.

Its chief towns are Launceston, Fowey, Padstow, Newquay, Penzance, St. Austell, Perranporth, and Saltash, Grampound, Polzeath, and Trevithick.

BODMIN is a small town lying between two hills, consisting chiefly of one street, being a mile long, and the houses are, for the most part, ancient, and huddled higgledy built, though several have been recently erected upon an improved plan. The church of this place is reckoned the largest in Cornwall. In the vicinity of Bodmin are those monumental stones called the *Hurlers*, supposed to be the remains of an ancient Druidical temple; also a cistern, the water of which represents a variety of colours like the rainbow, and it is said to preserve its wonted tints for nearly a twelvemonth. BOLEINKEY, a very insignificant place, is little more than a heap of rubbish. It is called so, probably, for being one of the recent disfranchised boroughs, and for being the supposed birth-place of the British King, Arthur.

CANTERBURY, an ancient but insignificant village, is seated on the River Camel, in a dismal part of the county. It is said to have been formerly a place of very considerable importance. The neighbourhood is said to have been the theatre of two desperate battles; the one between the SAXONS and BRITONS; the other between King Athelred and his rebellious nephew Morcar, when the former was mortally wounded, and the latter was killed on the spot. CALDWELL, seated on a hill, is a small town, with a very extensive parish. It is sometimes called St. Columba's, which name it received from an ancient church dedicated to St. Columba. EAST and WEST Looe, so called from their situation on each side of a river Looe, are two small fishing-towns, having about one hundred houses burden, on a bridge over the river, about fifteen acres, and is very narrow, muddy, and ill-constructed; one is a labyrinth of short, narrow, dirty streets, or alleys. WEST Looe lies in a bay on the opposite side, which ascending immediately from the water presents the appearance of a long street, consisting of about twenty houses, creeling, as it were, up the side of a hill. They have a fine view of both towns, situated with the river between them, the sides of which are covered with ancient, decaying cottages, &c. impeding the river, which is extremely picturesque. Both East and West Looe were formerly boroughs, and sent two members each to Parliament, but were disfranchised by the Reform Bill of 1832.

FALMOUTH is a rich, well-built, trading town, and the station for the packets to Spain, Portugal, and America. In situation it is very commanding, and, on account of the greatest burden may with ease come up to the town, and

* The first-born son of the King of England, has his own right, "Duke of Cornwall;" and has a revenue from the produce of the mines, and the power of appointing twelve miners, the chief of whom is the Lord Warden. The revenue arising to the Duke from these mines is about 10,000*l.* per annum.

from its being surrounded by high lands, the whole British navy may ride here in the greatest safety, and next to Milford Haven is the noblest and safest road in Great Britain. It is defended by the castles of St. Mawes and Pendennis. This town is of great antiquity; it was formerly known by the name of "Penny Come Quick," used, about the year 1600; it received its present name from the river Fal. Falmouth is 12 miles from Truro, and 203 from London.

FOWAY is a populous and flourishing port, with a commodious and secure harbour, capable of receiving vessels of large burthen. It was formerly, for its maritime powers, made a Cinque Port by Edward III. It has a considerable share in the fishery, and also a respectable foreign trade. Fowey is noted as the birth-place of the infamous HUGH PRYTAN, a great pretender to the saintly character in the reign of Charles I., and one of the foremost to encourage and justify the rebellion against that monarch. It was strongly suspected that he was one of his masked executioners. He was executed for rebellion at Charing Cross in 1660.

ST. GERMAINS, a small decayed town, was once the largest in the county. It derives its name from ST. GERMANUS, a bishop of Burgundy, who came over to this country to suppress the Pelagian heresy. It was once a bishop's see, and the ruins of the Episcopal palace are yet visible.

GRAMPYOND, a small town, is supposed to have been originally called "Grand Pont" (Great Bridge), from its bridge over the River Fal. It was made a borough by Edward III., but no representatives were returned to Parliament until the reign of Edward VI. It is now disfranchised.

HILSTORX, seated on the river Looe, near its influx with the sea, is a considerable trading town, and one of those appointed for stamping of tin. It was incorporated by Queen Elizabeth, and governed by a mayor, aldermen, and common council. A little below this town is a tolerable good harbour, where several of the tin ships take in their lading. Its streets are built in the form of a cross, and at the point of their intersection is the market-place, the largest in the county. The steeple of the church is 90 feet high, and serves as a landmark.

ST. IVES is a small sea-port, seated on a bay of the same name. Its proper and original name is St. Ivo, derived from Ila, a woman of great sanctity, who came from Ireland about the year 400. Its present name is very irregular.

CALLINGTON, formerly a burgh, but now discontinued, is famous for its manufacture of slate roofs, which give employment to a great number of people. The slate is low and unpleasant, and its houses are made of stone.

LAUNCESTON, a populous and thriving town, on the Tamar, was made a free borough by Henry VII., and incorporated by Mary in 1557. It had formerly a community and a castle, which, in the time of Leland, was the strongest in the kingdom. The tower part of this castle (anciently called Castle Terrible) yet remains, and is made use of for the town jail. The streets are narrow, but many of the houses are well built. The town was formerly surrounded with a wall, which had three gates, and a postern, some parts of which still remain. Launceston is distant from London 213 miles.

LISKEARD, an improving town, is situated partly in a bottom, and partly among rocky hills, so that the streets have

the appearance of being disposed with studied irregularity. The basement stories of the houses are as much diversified as the streets, the foundations of some buildings being, in a manner, on a level with the chimneys of others. On an eminence near this town formerly stood a castle, but time, or accidental circumstances, have nearly obliterated every trace of it. It is distant from London 234 miles.

LEAVYTHIEL, so designated by Cambren, and Bredece to be the *Uxellum of Ptolemy*. It is seated on the river Foy, which receives the side, and becomes navigable at a little distance below the town. The streets are narrow and unpaved. Its church is the only one in the county, except Helston, that has a spire. Near the church are the remaining walls of a building called the Palace, anciently the residence of the Dukes of Cornwall, but now converted into the stannary prison. This was once a very extensive fabric, but its site is now chiefly occupied by timber yards. Leavythiel was anciently the county-town. It is distant from London 245 miles.

ST. MAWES is a small straggling town, of one street, situated on the east side of the entrance into Falmouth Haven, on a neck of land opposite to Falmouth. It is without either minister, church, or chapel. It has, however, a castle, built by Henry VIII., and a governor, deputy-governor, two gunners, and a platform. On the north front, the hill is defended with 70 pieces of cannon, and the east side is defended by two batteries. The inhabitants subsist chiefly by fishing. Till lately it had the honour of sending two members to the British Senate, but it is now disfranchised. ST. MICHAEL'S, although more inconquerable than ST. MAWES, if possible, formerly sent two members to Parliament, but it is now disfranchised.

PADSTOW is an ancient town and safe sea-port, near the mouth of the river Camel. It has a good harbour for ships of 500 tons burthen. It has a commodious church, built by ST. PATRICK, in the year 432, whose tomb was remaining here in the fifteenth century. May day is commemorated by the inhabitants of this place in a manner peculiar to themselves, who go about the town in an odd figure, which they call a ring-dance, and draw it a mile into the country, where they continue the town, with singing and music, and dancing, till twelve dancing.

PENZANCE, a small town, situated on a creek of Falmouth Haven, has a good harbour, and is a port of entry for pilot-boats and Newfoundland fish. It has a fine quay, and orchards in it, that are well cultivated.

PENZANCE, a built town, is situated on the coast of Cornwall, near the Bristol Channel, and 10 miles from Falmouth. It carries on a very considerable trade in pilot-boats, but it was surprised and taken by the French, but soon partly rebuilt. The most remarkable phenomenon that ever appeared in the neighbourhood was the inundation of November, in 1755, about noon, the afternoon, the day on which Lisbon was destroyed by an earthquake. There was just before a dead calm. The sea at St. Michael's Mount, after it had ebbed and flowed half an hour, suddenly rose six feet, and again receded in about ten minutes. This flux and reflux continued every hour and a half, for two hours and a half. It is distant from London 203 miles.

PENZANCE is situated on an eminence, in the midst of the mining district, and consequently is a place of some importance, at which of the business and commercial transactions of the miners are carried on and adjusted here. It is distant from London 203 miles.

PENZANCE is a small town, on the right bank of the river Tamar, over which is a ferry to Devonport. It is distant

* It was from this port that Drake set sail on his voyage round the globe in 1577.

the side of a steep hill, and consists of three principal streets, which are washed clean by every shower of rain. Its principal trade is in malt and beer. It first sent members to Parliament in the reign of Edward VI., but is now wholly franchised.

STRATTON, a small town, is chiefly noted for its gardens and orchards. In the neighbourhood of this town a memorable victory was obtained, May 16, 1646, by a comparatively small body of King Charles's forces, commanded by Lord Hopton, over 4,400 of the Parliamentary army, under the Earl of Stratford. The latter army were entirely defeated, with the loss of all their camp-baggage, ammunition, and horses.

TREDOXYS, formerly a place of some importance, is now fallen into decay, which first commenced when Truro began to flourish. It formerly sent two members to Parliament, but is now disfranchised.

TRURO, a neat and populous town, is situated at the head of Falmouth Haven. It is chiefly noted as one of the original estuary towns; and more tin is now coined here, and more exported hence, than from any other town in the county. It is also noted as the birth-place of Dr. WOLCOT, the celebrated satirist, better known by the name of PETER PINDAR; and the Rev. THOMAS HARRIS, the founder of the London Missionary Society, and father of the Missions to the South Sea Islands. He died in Bath, in 1820, aged 86. **OPIZ**, a very eminent painter, was born in the village of St. Agnes, about 7 miles from Truro, in 1761; he died in 1807, and was buried in St. Paul's Cathedral. The Scilly Islands are included in this county.

Population of the chief Towns.

Bodmin and Parish	3,782
Camelford	1,366
Columb-Mine, and Parish	2,790
East Looe	865
West Looe	693
Falmouth	1,684
Penryn	1,177
St. Cleophas and Parish	1,146
Trampound	1,076
St. Ives	1,076
Callington and Parish	1,076
Launceston	1,076
Liskeard and Parish	1,076
Lostwithiel	1,076
St. Mawes	1,076
Falstow	1,076
Penryn	1,076
Penzance and Parish	1,076
Redruth and Parish	1,076
Saltash	1,076
Stratton	1,076
Tregony	1,076
Truro	2,925

Cornwall sends 14 members to Parliament, namely, 10 for the county; 2 for Bodmin; 1 for Helston (formerly two); Launceston 1 (formerly two); Liskeard 1 (formerly two); Penryn 1; Falmouth 2; St. Ives 1 (formerly two); Truro 2.



EARTHQUAKE AT LISBON

Of all the various visitations of Providence, few are more terrible than an earthquake. In Europe it is seldom experienced in any violent degree, but in South America its ravages are frequent and extensive. At Lima, for instance, the last preceding night of the establishment swallowed up or crushed by the falling buildings, and ships driven far up into the land, or dashed against each other, and so crowded up in the agitated waves. Yet Lisbon has not been equally exempted from this terrible calamity. In 1755 Lisbon was visited by most fearful convulsions of the earth, of which the whole swallowed up, nothing appearing where it stood but a dismal and pestilential lake.

In Italy, a terrible earthquake wholly destroyed the fine and sumptuous city of Tuscany, leaving scarcely a vestige of its buildings, out of a population of 19,000 inhabitants, scarcely 1,000 persons remained.

The most terrible shake which rendered Lisbon a heap of ruins is said to have been in the memory of some aged persons now living. About the 1st of Sept. 1755 to the summer in which this catastrophe took place, there had been a great drought, and the springs, which before yielded plenty of water, were totally dried up. But during this period, likewise, there were, occasionally slight tremors of the earth—but in 1755, there was a great quantity of rain, and the summer, in conse-

quence, was unusually cold. The autumn, however, was clear and serene until the last day of October, when a general gloom seemed all of a sudden to prevail.

The next day a thick fog arose, but it was soon dissipated by the heat of the sun. No wind was stirring; the sea was calm, and the heat, for the season, very great. Nine in the morning, a rattling noise, like that of thunder, was heard, which was soon followed by an earthquake, which, in the space of six minutes, laid great part of the city in ruins, and killed 50,000 of its inhabitants.

The Tagus, which at Lisbon is very wide, was violently agitated, and its bottom, in many places, so heaved up as to be at a level with the surface of its waters. Ships were driven from their moorings, and a pier, lately constructed, sank with many hundreds of people on it, to so great a depth that none of the dead bodies were ever found.

At one moment the waters of the river receded, so that its most shallow part, called the bar, was left dry; but soon the sea came rolling in like a mountain, and the river rose suddenly upwards of fifty feet. The calamities of this devoted city did not, however, end here: about noon another shock was felt, and houses were seen to open in great clefts, which afterwards closed, and left scarcely a trace of the rupture. To complete its destruction, fires broke out in different parts, which raged with uncommon fury for three days, and devoured what the earthquake had spared.

This terrible convulsion of the earth was felt to a vast distance. St. Ubes, a sea-port town, twenty miles from Lisbon, was entirely swallowed up, and large masses of rock were detached from the promontory at the extremity of the town.

At Cadiz, the consequences of the concussion were awfully serious. About eleven o'clock a wave was seen coming in from the sea, at least sixty feet higher than ordinary; it struck with violence against the rocks which bound the promontory on which Cadiz stands, rushed over them, reached the walls, and beat in the breastwork, removing masses weighing eight or ten tons each many yards.

At Oporto, the shock was felt nearly at the same time as at Lisbon. The river continued to rise and fall several feet for hours, and at one period its bed appeared to open and discharge great quantities of air. The same phenomenon seemed to take place at sea, about a league beyond the bar, as its waters were peculiarly agitated at that distance. From these circumstances we may fairly infer, that the rarefaction of the internal air of the earth, from some unknown cause, assists in the production of earthquakes.

Nor was this dreadful convolution confined to Europe. Africa felt its effects with great severity: great part of the city of Algiers was levelled with the ground. At Amilia, in Fez, a vessel was thrown on shore with such violence as to be dashed in pieces; and many cities were threatened with destruction, though they happily escaped with comparatively slight damage.

In those countries at a great distance from the centre of the concussion, effects of this earthquake were perceptible in the waters. In Great Britain and Ireland, many indications of this nature were given. At Barlborough, in Derbyshire, a sudden and terrible noise was heard to issue from a body of water called Pitley-dam, which is about thirty acres in extent: a swell of water proceeding from the south rose two feet on the north dam-head; it then subsided, but immediately returned, and continued thus agitated for forty-five minutes, but with diminished violence. In the moat which surrounds Shirebourne Castle, in Oxfordshire, while the air was perfectly still, and the water of the moat quite smooth, as a sudden it began to flow from one corner towards the shore,

and retire alternately with considerable violence. Every flux began slowly, but increased in its velocity, till it reached its full height, when it rushed with great impetuosity.

In Scotland, the lakes were greatly agitated; and at Kinloch, in Ireland, when the weather was perfectly calm, and the tide nearly full, a great body of water suddenly rushed into the harbour, and with such violence as to break the cables of two vessels, each moored with two anchors—they were whirled round several times by an eddy, and then hurried back again with the same rapidity as before.

Many more instances of the effect of this tremendous convulsion of nature, which extended over a space of four millions of square miles, might be adduced; but these will suffice to give some idea, though a faint one, of its formidable nature.

But the calamities of Lisbon did not end with the earthquake, a pestilence was dreaded from the putrefaction of the dead bodies that lay unburied in multitudes—but the fire prevented this by consuming them. Still the miseries of famine and the depredations of miscreants who took advantage of the catastrophe to plunder the property which the earthquake had spared, were to be dreaded and deplored. From the former, however, they were relieved by the active exertions of the Government, and the beneficence of neighbouring nations, and a few severe examples deterred the plunderers from their atrocious pursuits.

M. Baretti, an Italian of eminence, who visited Lisbon soon after this dreadful occurrence, gives the following account of the appearance of the city:—"As far as I can judge," says he, "after having walked the whole morning and afternoon about these ruins, so much of Lisbon has been destroyed as would make a town twice as large as Turin. Nothing is to be seen but vast heaps of rubbish, out of which arise, in numberless places, the miserable remains of shattered walls and broken pillars.

"Along a street, which is full four miles in length, scarcely a building stood the shock; and I see, by the materials among the rubbish, that many of the houses along that street must have been large and stably, and intermixed with noble churches and other public edifices; nay, by the quantities of marble scattered on every side, it plainly appears, that one-fourth, at least, of that street was built of marble. The rage of the earthquake (if I may call it rage) seems to have turned chiefly against that long street, as almost every edifice on either side is, in a manner, levelled with the ground; whereas, in other parts of the town, houses, hurches, and other buildings, are left standing, though all so cruelly shattered as not to be repaired without great expense: nor is there, throughout the whole town, a single building of any kind, but what wears visible marks of the horrible convulsion. As I was thus rambling over these ruins, an aged woman seized me by the hand with some eagerness, and pointing to a place just by, 'Here, stranger,' said she, 'dost thou see this cellar? It was only my cellar once, but now it is my habitation, because I have none else left! My house tumbled as I was in it, and in the cellar was I shut up the ruins for nine whole days. I had perished with hunger but for the grapes which I had hung to the ceiling. At the end of nine days I heard people over my head, who were searching the rubbish. I cried as loud as I could, when hearing me, they removed the rubbish, and took me up!' Another deliverance, not less singular, was the following: a gentleman was going in his carriage along a kind of terrace, raised on the brink of an eminence which commands the whole town. The frightened mules leaped down the eminence at the first shock, they and the rider were

killed on the spot, and the calash broken to pieces, but the gentleman escaped unhurt."

It is remarkable that the day on which this calamity happened, there was to have been a grand auto-da-fé, when a number of prisoners were to have been executed for the crime of not thinking as their persecutors thought—whether they escaped or were buried in the ruins, it was a happy day for them, as they thereby avoided the tortures intended for them.

For the inhabitants in general, however, it was quite the reverse. It having happened at the time of high mass, preparatory to the shocking spectacle that was to follow, thousands had crowded into the churches, the greater part of whom were killed—for these lofty buildings suffered the greatest damage; indeed, very few churches and convents escaped.

Zealous Protestants will be apt to consider the earthquake, happening at so critical a moment, as a special indication of the wrath of the Almighty against persecutors—such should, however, call to mind our Saviour's question—"Those on whom the Tower of Siloam fell, and slew them, think ye that they were sinners above all the Galileans? I tell you nay." The event was a natural one, and its happening on that day, one of those remarkable coincidences which cannot be explained. Judgment against persecutors will be executed at the great day of account; but, in the present life, one event happeneth to all.

It is impossible for imagination to conceive a more distressing spectacle than Lisbon presented the morning after its calamitous overthrow. Those that had escaped immediate death were nearly naked and destitute, deprived of relatives and friends, and houseless at the commencement of an inclement season. Until the benevolent contributions of the different nations could reach their destination, thousands suffered all the privations such a situation induced—there were no distinctions of rank—distress had levelled all, and they lived under tents, the rich mingled with the poor.

So sudden and terrible an event ought to admonish us so to live, that we may be habitually ready to quit this world whenever the summons may come. There are a thousand ways by which man may be cut off when he least expect it, and placed before the bar of his omniscient Judge.

SIR CHRISTOPHER WREN.

THE introduction of the Palladian school, by Inigo Jones, was the commencement of our architectural glory; and when that celebrated master quitted the busy scenes of life to inhabit mansions far more durable than the mightiest of his own erections, his mantle (like Elijah's) descended to the subject of our present notice, whose transcendent genius rekindled the love for that noble art, which, during intestine troubles, had so long been neglected, and fully accomplished what his predecessor had so happily commenced.

Christopher Wren was the only son of Dr. Christopher Wren, Rector of East Knoyte, in Wiltsshire, a very learned divine, of Danish descent; and was born at his

education at

in St. John's College, Oxford; and became successively Chaplain in ordinary to the unfortunate Charles I., Dean of Windsor, and Registrar of the Order of the Garter. He was well versed both in science and literature, enjoyed the friendship of the literati of his time, and had even ac-

quired such a knowledge in the art which afterwards so exalted the fame of his son, that he was actually consulted by the Court respecting a building intended to be erected for the Queen.

His brother, Dr. Matthew Wren, the uncle of Sir Christopher, was successively Bishop of Hereford, Norwich, and Ely; and by his undaunted and devoted attachment to his royal master and his cause, and by his sufferings on that account during the usurpation, became deservedly eminent in history. Shortly after the impeachment of Archbishop Laud, Bishop Wren was also impeached in the Commons; after which he suffered an imprisonment of nearly twenty years for his loyalty, without having ever been brought to trial; and although Cromwell sent him a message by his nephew, the subject of our present notice, that he might come out of the Tower if he chose, yet he sternly resolved to remain, "to tarry," as he expressed himself, "the Lord's leisure, and owe his deliverance to Him only," rather than, by accepting the proposed terms of his freedom, to yield submission to the tyrannical usurper, or meanly to acknowledge his favour. His constancy did not, however, as might have been expected, cause any additional inconvenience to be imposed upon him.

Thus highly connected, and born with all the advantages auxiliary to the acquirement of scientific and literary knowledge, and to the pursuit of fame and honour, it is not surprising that the superior talents of Christopher Wren were early displayed.

In his infancy and youth his health was peculiarly delicate, in consequence of which he passed his early years at home, under the able tuition of his father, but he received some part of his education from the celebrated Dr. Busby, at Westminster School, whence he entered Wadham College, Oxford, at the age of fourteen.

The extraordinary genius and acquirements of his youthful days, gave effective assurances of his future eminence, which were indeed fully answered, since, aided by his virtues and amiable disposition, they procured for him a long course of happiness and honour.

At the age of thirteen, his talents were strongly developed in the invention of a new astronomical instrument, to the account of which he prefixed an epistle dedicatory to his father, in Latin.

At sixteen (when he had resided only two years at Oxford), the knowledge which he had acquired of mathematics and other branches of natural philosophy, was considered very extraordinary; and, notwithstanding his youth, his attainments procured him the friendship and patronage of many eminent persons, particularly Bishop Wilkins, and the celebrated Oughtred. The former introduced him as a post-graduate to the Society of Jesus, Charles.

In 1645, the embryo institution of what has since been perfected into the Royal Society took place. It consisted in a kind of club, formed by Dr. Willis, an eminent mathematician, of scientific persons, chiefly connected with Gresham College, who held weekly meetings for the discussion of philosophical subjects; of this club, although of so tender an age, Wren was admitted a member, and at its assemblies he displayed many new theories, experiments, and mechanical improvements. In 1648, the principal members removed to Oxford, where their scientific debates were continued.

The learned Dr. Spratt, Bishop of Rochester, thus records the objects of this infant association, from which has since sprung so eminent and useful a society:—"Their first purpose was no more than only the entertainment of breathing a fresher air, and of conversing in quiet one with another,

without being engaged in the passions and madness of that dismal age.* And from the institution of that assembly I had been enough, if no other advantage had come but this, that by this means there was a race of young men provided

for the next age, whose minds, receiving from them

first impressions of sober and generous knowledge,

invincibly armed against all the enchantments of enthusiasm. But what is more, I may venture to affirm, that it was in good measure by the influence which these gentlemen had over the rest, that the University itself, or at least any part of its discipline and order, was saved from ruin.

“ Nor were the good effects of this conversation only confined to Oxford, but they have made themselves known by their printed works, both in our own and in the learned languages, which have much conduced to the fame of our nation abroad, and to the spreading profitable light at home.”†

In November, 1653, Wren was elected a fellow of All Souls’ College, and on the ensuing 11th of December, he took his degree of M.A.

During his residence at the University, he was ranked among the first professors of the day in the science of anatomy; and as early as the age of fifteen, he was employed by Sir Charles Scarborough, an eminent physician and mathematician, as a demonstrating assistant, in which station his abilities were strongly displayed. He executed all the drawings for Dr. Willis’s *Treatise on the Brain*, in which work his anatomical attainments and skill are acknowledged. He was also the first author of the physiological experiment of injecting liquors into the veins of animals, &c.

In 1657, being only in his twenty-fifth year, he was elected Professor of Astronomy at Gresham College; upon which occasion he left his Oxonian retirement for a more extensive sphere of action in the metropolis. His inaugural oration in Latin perfectly established his reputation, and his lectures were frequented by many eminent and learned persons, among whom were the greater part of his colleagues of the Oxford Society, who came to London about 1658.

In 1658, Wren added fresh laurels to his mathematical wreath by solving the famous problem which Pascal, under the assumed name of Jean de Montfort, had proposed as a challenge to all the learned of this country; and he returned the defiance by giving out another for the solution of the French mathematicians, which, however, was never answered.

In this year also, he produced his method for the rectification of the cycloid; and communicated four mathematical tracts to the Savilian professor at Oxford, Dr. Wallis, which were published by the latter in his *Treatise on the Cycloid*; and in addition to these labours, he made a series of observations on the pitchiness of Saturn, of which he explained the results in his astronomical lectures.

The distractions which followed the death of Cromwell, which happened in this year, occasioned the dispersion of the crew, and Gresham College itself was occupied all a garrison by soldiers. Wren, whose pursuits were utterly

opposed to the discords of party and politics, avoided them by retiring to Oxford.

On the 5th of February, 1661, he was chosen Savilian Professor of Astronomy at Oxford, in the room of Dr. Seth Ward. At that time, this was one of the highest distinctions which could be conferred upon a scientific man; he accordingly accepted his Graham professorship on the 6th of March following, and entered upon the duties of the Savilian on the 1st of May. On the 12th of September, in the same year, he was created LL.D.

Soon after the Restoration, the Royal Society was instituted; and thus the little Oxford club, which originated in the laudable desire of a few private individuals to promote the increase of scientific knowledge, became the means of establishing one of the most important institutions of this country—a society founded on the best and purest principles, and since productive of the most beneficial results to the nation in general, by its extensive labour in inventing and promulgating improvements in the arts and sciences. In forming this society, the poet Cowley bore a conspicuous part; and Dr. Wren, by his many curious discoveries in astronomy, natural philosophy, and other sciences, greatly promoted it.

About this time he discovered a method of calculating solar eclipses, which the royal astronomer, Flamsteed, published in his *Doctrine of the Sphere*, and which, for many years, was in general use.

In 1662, he published his *Prelections Astronomicæ*, at the Oxford press.

Having, in addition to his other attainments, acquired a considerable knowledge of architecture, Dr. Wren had, in 1661, been sent for from Oxford by the King, in order to assist Sir John Denham, the Surveyor-General, in superintending the restoration of St. Paul’s Cathedral, which had become greatly dilapidated during the Commonwealth; its revenues having been confiscated by Cromwell, and the choir converted into horse-barracks. For this purpose, therefore, a commission was issued on the 18th of April, 1663, in which Dr. Wren was named; and on the 1st of August following, the repairs were commenced.

In 1665, Dr. Wren went to Paris, for the purpose of studying all the principal buildings, and the most remarkable inventions in the various branches of mechanics. He also made excursions to other places in France for these purposes, and designed to have passed from thence into Italy; but it does not appear that he ever carried his intention into effect.

He returned to England early in 1666, and continued as deputy to Sir John Denham, superintend the repairs of St. Paul’s, the state and condition of which he appears to have very minutely examined. His thoughts had long been engrossed in devising the best mode of restoring the Cathedral, which had been partly repaired by Inigo Jones, who added to it a very beautiful Corinthian portico at the west end, although utterly irreverent to the style of the building; to this end he proposed to rebuild the steeple with a cupola, a mode of church-building not then known in England, but exceedingly graceful. This project, however, after the consumption of much fruitless labour, and an expenditure of 3,500*l.* 5*s.* 1*d.*, principally for the repairs of the portico, was rendered abortive by the dreadful conflagration of 1666, which destroyed the chief part of the building, and irreparably damaged the remainder.

(To be continued.)

* The times were then full of trouble, and distracted by party fury. Wren, however, although he lived in the midst of those dissensions, when the contending parties were committing continual acts of violence, wholly devoted to the pursuits of science; and more fortunate than his father and uncle, he quietly pursued his undeviating path to deserved honour.

† *History of the Royal Society.*

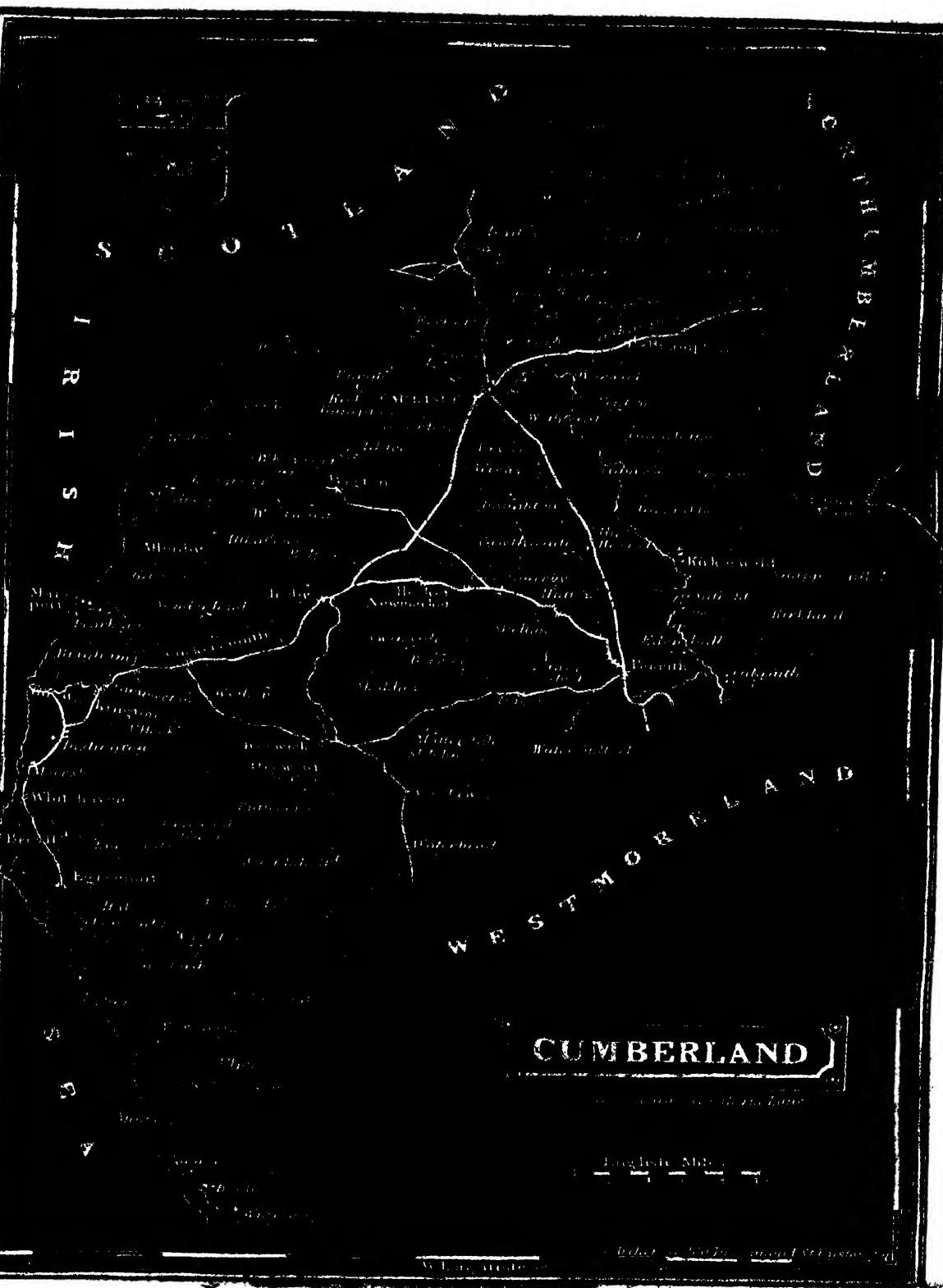
‡ A curve, on which the doctrine of pendulums and time-measuring instruments principally depend.

§ See *Astronomy*.

No. XLVII.

SUPPLEMENT TO PINNOCK'S
GUIDE TO KNOWLEDGE.

part IV.



CUMBERLAND

CUMBERLAND.

THIS county is supposed to have received its name from the *Cumbri*, or *Cimbri*, a name given to the ancient *Britons*, who long supported their independence against the encroachments of the *Saxons*. Cumberland is a maritime county. It is bounded on the north by Scotland, on the west by the Irish Sea, on the south by Westmoreland and on the east by Northumberland. It is about 80 miles in length, 40 in breadth, and 224 in circumference. It contains one city, 15 market towns, 58 parishes, and 447 villages. It lies in the province of York, and diocese of Carlisle and Chester.

The air of this county, though cold, is less piercing than might be expected from its situation, being sheltered by lofty mountains on the north, on the side of Scotland. Cumberland, though a county of great extent, is one of the least populous in the kingdom, its general character being that of a county of bleak mountains, naked moors, and wild wastes; rich, indeed, in mineral treasures, but for the most part unfit for cultivation. Its chief mineral productions are, lead, copper, and iron; but the most peculiar is the *Wadd*, or *Black-lead*, which for the richness and quality of the substance are unequalled in the world.

The chief rivers are, the *Eden*, *Derwent*, *Caledew*, and the *Esk*. The *Derwent* rises from the wild district of Borrowdale, whence it flows towards the north, and forms the romantic and justly-admired *Lake of Derwentwater*, in the Vale of Keswick, which is encircled by rocks, mountains, and cataracts, and beautifully distinguished by small woody islands. The *Derwent* is rapid throughout its whole course, and its scenery is beautifully striking and romantic. It runs through the middle of the county, passes by Cockermouth, and falls into the Irish Sea near Workington. This river abounds with salmon. The *Eden* issues from the side of a hill in Westmoreland, passes by Carlisle, and falls into the Solway Frith, where it forms a fine estuary. The *Caledew* issues from the south-east side of Skiddaw, and, pursuing a northerly direction, joins the *Eden* at Carlisle. The *Esk* is a large river, which enters Cumberland from Scotland, and passing by Longtown, it falls into the Solway Frith. This county, and the adjoining one of Westmoreland, are celebrated for their lakes, and for the delightful and romantic scenes that surround them. The *black-lead* which is found in the county is called by the inhabitants *Wadd*, which is properly not a metal or a mineral, but rather an earth, strongly impregnated with streams of lead. There is more found of it here than suffices for the consumption of all Europe. The black-lead, or *Wadd* mines lie chiefly in and about the hills, called *Derwent Fells*, where it may be dug up in any quantity. From the coal-pits on the coast, Ireland is indebted for its fuel.

Its chief towns are *Carlisle*, *Brampton*, *Cockermouth*, *Egremont*, *Irby*, *Keswick*, *Whitehaven*, *Wigton*, *Fleet-Oswald*, *Longtown*, *Penrith*, and *Ravenglass*.

CARLISLE, a very ancient city, and capital of Cumberland, is pleasantly situated on a rising ground, near the confluence of the *Eden*, the *Peterel*, and the *Caledew*, three rivers abounding in fish, and by which the city is almost surrounded. This city, the key to England on the north, as Berwick is on the east, is strongly fortified, and surrounded with a wall broad enough for three men to walk abreast on the top. It has three gates. The three principal streets range nearly in the form of the letter Y, and meet in the market-place, where the Town-hall, Moot-hall, and Council-chamber are situated. The streets are well paved, and many of the houses are elegantly and well finished. The

chief public buildings most worthy of notice are the Castle and Cathedral. The castle was made the prison of the unfortunate *MARY*, Queen of Scots. Carlisle is said to derive its name from the British word *Caer*, which signifies a city, and the name of the founder, who was a petty king of this district before the time of the Romans; who, at different periods, was known by the several names of *Luel*, *Luet*, *Leit*, *Luet*, and *Leybel*; or that it was called *Leff's City*. In the time of the Emperor *CLAUDIUS*, the Roman legions had made a progress so far northward, that they fixed their station here, and called it *Lagubalium*. Hence it is that so many Roman coins have been found in this neighbourhood. This city has been destroyed by wars and fires several times; at present it is populous and well built, with a good trade. Carlisle is 40 miles from Dumfries, 56 from Newcastle, 91 from Edinburgh, 194 from Glasgow, and 302 from London.

COCKERMOUTH, is so called from its situation at the mouth of the river Cocker, which divides it into two parts, and then falls into the river Derwent, near the western extremity of the town. The streets are spacious, but irregularly built. It is chiefly noted for the ruins of a castle, on the gates of which are the arms of the *Moltons*, *Hunfravilles*, *Lucies*, and the *Percies*. Its situation for trade is excellent, the surrounding country being populous and very fertile, and having a constant and plentiful supply of water by different streams. Here are also several valuable coal-mines, and three sea-ports within the distance of 15 miles. Cockermouth is 13 miles from Whitehaven, 28 from Carlisle, and 303 from London. *BRAMPTON*, an inconsiderable place, is about 10 miles from Carlisle. This town chiefly consists of one spacious street. It was formerly a Roman station, and a place of some note in the second and third centuries.

KESWICK, a small town, is beautifully situated in a rich and extensive vale, and is almost surrounded with mountains, called the *Derwent Fells*. It is particularly noted for *black-lead* for drawing pencils; and also receives considerable advantage from the excursions of the nobility and gentry who resort hither to inspect the wonders of the lakes and surrounding mountains. Near this town is a Druidical monument, composed of stones of various sizes, placed in a form nearly circular, the diameter being one way 30 paces, and by the other 32 paces. Keswick is 17 miles from Penrith, and 292 from London.

EGREMONT is a small town, pleasantly seated on a small stream about two miles from the sea. The origin of this town appears connected with that of the castle, which was erected here about the beginning of the 12th century, the ruins of which occupy the summit of an eminence on the west side of the town.

IREBY, an ancient town, is situated on the road between Cockermouth and Wigton, and near the source of the river *Ellen*. It is sometimes called *High Ireby* to distinguish it from *Low Ireby*, which is about a mile distant.

KIRK OSWALD, so called from its church, dedicated to St. *Oswald*, stands on a hill, near the river *Eden*. Near this town are the remains of a Druidical monument, called *Long Meg* and her daughter; which consists of a circular arrangement of unhewn stones, about 360 yards in circumference. Some of the stones are 20 feet high, and from 14 to 15 in girth. The stone called *Long Meg*, about 17 feet out of the circle, is 18 feet high, and 14 in circumference.

LOADTOWN is situated near the borders of Scotland.

PENRITH, a rich and well-built town, is seated under a hill on the great post-road from London to Glasgow. It derives its name from the colour of the neighbouring soil;

and of the stone with which it is built : *Penrith* in the British language signifying *Red Hill*, or *Red Head*. In the west part of the town are the ruins of a royal castle, and in the neighbourhood have been found several remains of antiquity. Its early history is unknown, but at the time of the Norman conquest, it was in the possession of the Scots, who were soon afterwards dispersed, although they still kept up their claim to the three counties of Cumberland, Westmoreland, and Northumberland. It is distant from Carlisle 18 miles, from Edinburgh 109, from London 284.

RAVENGLASS is a small but well-built town, with a good harbour for shipping. Its chief trade is fishing.

WHITEHAVEN, a noted sea-port, is so called from the white cliffs which shelter the harbour from storms and tempests. It is a large, populous, and improving town, and owes much of its improvement to the family of *Lonsdale*. It has an artificial harbour, defended by a long substantial pier. Its chief trade is in furnishing Ireland and part of Scotland with coal and slate ; and next to Newcastle, is the first sea-port for the coal-trade in England. These invaluable mines are 130 fathoms deep, and extend a very considerable distance under the sea. About three hundred years ago it had only six houses, but now it has a population of upwards of 11,000 souls. It is distant from London, by the way of Kendal, 318 miles ; but by *Alverstone*, only 295.

WIGTON, an inconsiderable town, is seated on the moors, about twelve miles from Carlisle. Near Wigton is *Caerlon*, an ancient Roman town or station, out of the ruins of which the church and many of the buildings seem to have been erected, as appears from a kind of rude chequer-work on the facings of the stone. A little north of Whitehaven is **WORKINGTON**, a considerable town at the mouth of the Derwent. It is noted for its coal-trade, and as the landing-place of Mary, Queen of Scots, when she was driven to take a refuge in the dominions of her rival, Elizabeth, in 1568. It is 33 miles from Carlisle, and 311 from London.

Population of the principal Towns.

Carlisle	2,006
Brampton	2,842
Cockermouth	4,536
Egremont	1,741
Keswick	2,159
Longtown	2,041
Penrith and Parish	6,059
Whitehaven	11,393
Workington	7,196

Cumberland sends nine members to parliament; namely, four for the county, two for Carlisle, two for Cockermouth, and one for Whitehaven.

SIR CHRISTOPHER WREN.

(Continued from page 360.)

Immediately after the fire, while the ashes were yet hot, Dr. Wren took a survey of the ruined city, and designed an admirable plan for a new one. In this plan all the deformities and inconveniences of the old capital were to be remedied, by enlarging the streets and lanes, and rendering them as nearly parallel to each other as possible ; by placing all the parish churches in a conspicuous and regular manner ; by forming the most public places into large piazzas, each of which should be the centre of eight different ways ; by uniting the halls of the twelve companies into one regular square, annexed to Guildhall ; and by making a commo-

dious quay along the whole bank of the river, from Blackfriars to the Tower.

The streets were to be of three magnitudes : the three principal ones to run straight through the city (viz., one from Fleet-street, inclusive, to Tower-bill ; one from Ludgate to the south front of the Royal Exchange ; and one from Holborn, through Newgate, to the north part of the Exchange), and one or two cross streets, to be at least ninety feet wide ; others sixty, and the lanes about thirty feet, excluding all narrow, dark alleys, thoroughfares, and courts.

The Exchange was to stand alone in the middle of a noble piazza, and to be in the centre of the town, whence the streets should proceed to all the principal parts of the city : the building was to be formed like a Roman forum, with double porticoes.

Many streets were also to radiate upon London Bridge : those of the two first magnitudes were to be carried on as straight as possible, and to centre in four or five areas, surrounded with piazzas.

The quay, or open wharf, on the bank of the Thames, was to be spacious and convenient, without any interruptions, and having large docks for heavy laden barges.

The canal to be cut at Bridewell (for the Fleet River) was to be 120 feet wide, with sashes at Holborn Bridge, and at the mouth, to cleanse it from all filth, and with stowage for coals on each side.

The churches were to be designed according to the best forms for capacity and hearing ; and those of the larger parishes adorned with porticoes, and lofty, ornamental towers and steeples ; but all church-yards, gardens, and unnecessary vacuities, and all trades which require great fires, or produce noisome smells, were to be placed out of the town.*

But this noble plan was rendered useless, by the selfishness and obstinacy of individuals who refused to exchange their property, and persisted in rebuilding their mansions upon their original sites, wherever the latter could be determined. These disputes, intrigues, and conflicting interests, therefore, prevented Dr. Wren from carrying his grand design into execution. The annexed engraving is a copy of this plan, which, if effected, would have rendered London far superior in architectural beauty and design to any capital in the world.

Notwithstanding, however, the prevention of this scheme, Dr. Wren had ample opportunity for displaying his skill, and obtaining immortal fame, in the rebuilding of St. Paul's, and the other churches of the city, and in erecting the Monument.

This latter structure is a column of the Doric order, of which the pedestal is 40 feet high, and 21 feet square ; the diameter of the base is 15 feet, its entire altitude is 202 feet, and within the shaft is a staircase of 345 steps. It is the largest single column in existence, except the Wellington testimonial, at Dublin, being 42 feet higher than the celebrated pillar of Trajan, at Rome. It was finished in 1677.

In 1668, Dr. Wren completed that magnificent edifice, the theatre at Oxford, which is peculiarly remarkable for the scientific construction of the flat roof, which is 80 feet long by 70 broad, and entirely unsupported by any arched work or pillars.

In the same year, at a meeting of the commissioners for rebuilding St. Paul's (on the 25th of July), a letter from the King was read which stated that "the ruins had

been examined by experienced workmen, who found the walls in so dangerous a state, that they were judged altogether insufficient for bearing another roof, or any new work." His Majesty then proceeds to order the old wall to be taken down to the foundation of the east end, "the old choir and the tower to be replaced with a new choir of a fair and decent fabrick, near or upon the old foundations; and also that care be taken to preserve the cornices, ashlers, and such other parts to the former work, towards the west, as shall be deemed usefull for the new fabrick, lest they be spoiled by the fall of more of the walls, which seeme to threaten immediate ruine."*

Accordingly, the demolition of the parts mentioned in the King's letter was soon afterwards commenced under the direction of a sub-committee, consisting of Sir John Denham; Leolin Jenkins, LL.D., Judge of the High Court of Admiralty; Dr. Sancroft, Dean of St. Paul's; † Dr. Pory; Dr. Donne, Residentiary, and Dr. Wren.

It was not yet, however, determined to erect an entirely new cathedral, the vast magnitude of the work, and the contemplation of the great expense such a building would require, deterring the city from undertaking anything more than a reparation and restoration of the ruined edifice.

In this year also (1668) Sir John Denham died, whereupon Dr. Wren was immediately appointed his successor as Surveyor-General of his Majesty's Works, and from this time he had the direction of a great number of public edifices, by which he acquired the highest reputation. †

At length, however, after a considerable loss of time, labour, and materials, the impracticability of restoring St. Paul's became so apparent, that all attempts at reparation were finally pronounced hopeless. This, indeed, had long been the opinion of Dr. Wren, who was now ordered to prepare the requisite plans for a new cathedral; and in 1669, we find that he was presented with 100 guinca pieces, valued at 107L. 10s., for his directions in the works, and for the design of a model. §

Nevertheless, several years yet elapsed before the great work was actually begun, as the contending opinions of those with whom the architect had to consult, and the difference between their taste and his, compelled him to waste much time in forming and re-forming models and plans. At length, after having been greatly harassed by the interference of these incompetent judges, and subject to much mortification by their frequent alterations of his designs, the plan of the present church was, in December, 1672, finally approved by the King, who ordered a model to be constructed sufficiently large to admit a man within it, and the commissioners directed the chapter-house to be roofed, ceiled, and glazed, as a receptacle for the model. After this period, the surveyor resolved to make no more models, nor publicly expose his drawings, which, as he had found by experience, did but lose time, and subjected his business many times to incompetent judges. ||

The variety of business in which Dr. Wren was now engaged as architect, completely occupying his time and attention, he resigned his Savilian professorship, at Oxford, on the 9th of April, 1673.

On the 12th of November, in the same year, the commission for rebuilding the Cathedral was issued; in 1674, Dr. Wren was knighted by King Charles II.; and on the

14th of May, 1675, the King signed an order for the commencement of the work, a sufficient sum of money having been raised to put it in great forwardness, as the Parliament had a few years previously determined that a duty of two shillings per chaldron should be levied on sea-coal for the purpose of rebuilding the Cathedral.

Accordingly, on the 21st of June, 1675, the first stone was laid, in the new foundation, at the north-east corner of the choir, by T. Strong, mason, and though various difficulties occurred in the course of the business, from want of money, the work was prosecuted with so much success and diligence, that within ten years afterwards the walls of the choir and side aisles were finished, together with the circular porticoes on the north and south sides; and the great pillars of the dome were carried to the same height.

The general form, or ground-plan, of St. Paul's Cathedral is that of a Latin cross, with an additional arm or transept, at the west end, to give breadth to the principal front, and a semicircular projection at the east end, for the altar. At the extremities of the principal transept there are also semi-circular projections for porticoes, and at the angles of the cross are square projections, which, besides containing vestries, staircases, &c., serve as immense buttresses to the dome. The dome itself rises from the intersection of the nave and transept; and is terminated by a lantern, surmounted by a ball and cross, gilt. *

It had been intended, and it was of course desirous, to rear the present structure as much as possible upon the old foundations, so far as the variation of the ground-plan would admit, and on searching for the natural ground, that he might have a secure foundation for the new fabric, it was discovered that the old cathedral had stood upon a stratum of very close and hard pot-earth, about six feet deep on the north side, but gradually declining towards the south, till, on the declivity of the hill, it was scarcely four feet: Dr. Wren concluded, however, that the same ground which had borne so weighty a building before, might reasonably be trusted again. On boring beneath the pot-earth, he found a stratum of loose sand; and lower still, at low water mark, water and sand, mixed with periwinkles, and other sea shells; under this a hard beach, and below all, the natural bed of clay, which extends, far and wide, under the city, county, and river. †

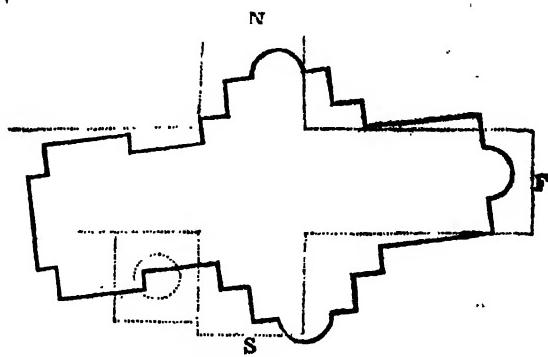


DIAGRAM.

An ancient burying-place, and various Roman and other antiquities were discovered on digging the foundations, and an immense pit, which had been excavated by the Roman potters, and afterwards filled up with fragments of broken vessels, urns, &c. This excavation interrupted the line of the foundations of the new church, and occasioned much

* Malcolm's *Londonum Redivivus*.

† Afterwards Archbishop of Canterbury.

‡ English Encycl.

Malcolm's *Lond. Red.*

Wren's *Parentalia*.

additional labour, for the hard crust of pot-earth having been taken away, the architect felt himself compelled to dig through all the intervening strata, till he came to the sea-beach at the depth of 40 feet; here, therefore, he commenced a pier of solid masonry, ten feet square, and carried it up to within fifteen feet of the present surface, where he turned a short arch to connect the work with the new foundations. In consequence, therefore, of these impediments, the site of the present Cathedral was in some measure diverted from that of the ancient one, as is seen in the annexed diagram, which shows the situation of both.

In 1680, Sir Christopher Wren was elected President of the Royal Society; and in 1681, he finished the beautiful church of St. Stephen, Walbrook: a building which, although little known amongst ourselves, is, in fact, famous all over Europe, and is justly reported to be his master-piece. Perhaps Italy itself can produce no modern building that can vie with it in taste or proportion. There is not a beauty which the plan would admit of, which is not to be found in its greatest perfection in this edifice: and foreigners may justly call our taste in question for understanding its graces no better, and allowing it no higher degree of fame.*

The exterior of this celebrated church has little to recommend it: the architect wished to surprise the spectator with the beauties of the inside, without the anticipation which an equally decorated exterior would create. No adequate idea can be given of the exquisite beauty of the interior by any description; the superior taste and consummate skill of the architect may be recorded, but the building must be seen to be justly admired—it is the admiration of the world, and had Sir Christopher's fame rested solely on this design, it would have placed him in the first ranks of genius.

In 1690, he finished Chelsea College; and, besides erecting the building, he prescribed the statutes and whole economy of the house.

In this year also he began to build the royal apartments at Hampton Court, which were completed in 1694. It does not appear that Sir Christopher was equally successful in all his designs, since it must be acknowledged that this structure and that of Winchester Palace (which was never finished, and is now used as a barrack), are far from being favourable specimens of the art. He had studied too much the buildings of Louis XIV. to preserve the classic purity of his taste in erecting palaces and private houses; and the vicious style of that monarch's edifices had so sensible an effect on his own designs, that it may be considered fortunate that the French built only palaces and no churches, so that St. Paul's escaped, while Hampton Court was sacrificed to the god of false taste.†

It may, however, readily be supposed that much of the censure appertaining to the defects in some of Sir Christopher's works may be attributed to the bad taste of his employers, who were obstinately desirous of following the French fashions, which were at that time much in vogue; and this supposition particularly applies to Hampton Court, since it is well known that King William (III.), whose taste in architecture was by no means equal to his patriotism, generously took upon himself the blame, when the arrangement of the low cloisters was criticised, acknowledging that by his own especial orders they were so constructed.

In 1708, Sir Christopher was appointed one of the com-

missioners for building the fifty new churches in and about London; and in 1710 he finished St. Paul's Cathedral.

The delight which a man of his elevated genius must have experienced in contemplating the rise and progress, and finally in beholding the completion of the vast edifice which his creative genius had planned, may be better conceived than described. It has seldom fallen to the lot of one architect to design and to perfect so stupendous a work.

This ample and magnificent Cathedral, universally admitted to be the second for grandeur in Europe, and undoubtedly the most splendid Protestant church in the world, was completed in 35 years, by one architect, under one Bishop of London, Dr. Henry Compton; whereas St. Peter's at Rome was 145 years in building, under 12 architects, and during the pontificate of 19 Popes.

The whole extent of ground on which St. Paul's stands is 2 acres, 16 perches, 23 yards, and 1 foot; and the entire expense of its erection was 736,752*l.* 2*s.* 3*d.*

It is generally acknowledged by men of taste, that the outside, and particularly the west front, is much superior to St. Peter's; the flat front of the latter, terminating in a straight line at the top, being entirely destitute of that pleasing variety which is presented by the elevation of the pediment in the middle of that of St. Paul's, and by the beautiful campanile towers at each end of it.

In magnitude of scale, in beauty of *internal* decoration, and in the advantages afforded by superiority of situation, climate, and material, our Cathedral cannot compete with the Roman edifice; but in architectural excellence it certainly equals, and in some things surpasses, especially in the construction of the dome, and in the novel and beautiful *circular* arrangement of the piers which support it.

The amiable architect, however, had not the happiness of pursuing his magnificent plans without interruption. He frequently met with vexatious opposition to, and ignorant interference with, his designs, from various unskillful persons, who were improperly joined with him in the commission, and who sought only their own aggrandisement. These annoyances were, however, invariably overcome by the inflexible prightness of Sir Christopher, who fearlessly exposed the ignorance and meanness of their authors, and the selfish interests which produced them. He thus triumphed over his disturbers, but not, as may be supposed, without creating undeserved enemies. Although his honest integrity, and his patriotic devotion to the interests of the public, overcame the impediments which these cavillers placed in his way, yet not all his genius or his virtues could disarm their revengeful malice. They neither forgot nor forgave their disappointments, but, joining in a cabal against the worthy architect, they persecuted him with the bitterest malevolence, and even caused a clause to be inserted in an Act of Parliament, suspending the payment of a moiety of his hard-earned pittance (200*l.* per annum),* till the building was

* The whole salary paid to Sir Christopher Wren as architect of St. Paul's, was a paltry 200*l.* a year; and this sum was not only the remuneration of his *designs* and *time*, but also included the whole expense of *models* and *drawings* of every part, the daily overseeing of the works, the framing of *estimates* and *contracts*, and auditing the bills! His pay as the architect for rebuilding the city churches was equally liberal, being only 100*l.* a year! and he bestowed all his services in the building of Greenwich Hospital *without salary or emolument*, generously preferring (as through his whole life he did) the public advantage to private interest. Considering, therefore, these disinterested services towards the public, the scantiness of his remuneration, the splendor of his abilities, and his wonderful labour and perseverance, we cannot but be filled with surprise and indignation in contemplating the

* The reputation of this beautiful structure among foreigners is indeed such, that a story is told of an Italian architect who visited London, and immediately returned after having examined St. Stephen's.

† Horace Walpole.

finished, whereby he was afterwards kept out of his money long beyond the period when it became due, under the frivolous pretence that the building was not complete; whereas these malicious persecutors themselves had, by their vulgar impediments, been the sole cause of delaying the completion.

(To be continued.)

PERSPICUITY, PROPRIETY, AND PRECISION.

THE great end of writing and speaking is to convey definitive ideas. Perspicuity, therefore, is the chief beauty and the most valuable quality of style. It is not merely a quality which heightens the value and beauty of the other good qualities of writing or speech, but is, in fact, that quality without which all the others are utterly destitute of use and ornament. However sonorous or euphonious each individual word may be in a spoken or written discourse, euphony and sonorous emphasis are but lifeless cloths, unless informed and animated by perspicuity. It is true, that sweetness of cadence and impressiveness of emphasis add to the value of perspicuity; but it is equally true, that without it they are utterly worthless. If a writer at once clearly and beautifully convey his meanings to us, he most assuredly confers a double obligation upon us; he at once gratifies our senses and informs our understandings. But if he gives us beautiful sounds without any meaning at all, or arranges those sounds so that they convey no meaning to us, he, in fact, confers no obligation at all upon us. He cheats us of our time and attention; and treats as he would do, who should invite us to a concert by way of satisfying our hunger or quenching our thirst.

Perspicuity is to be attended to, firstly, as to the choice of words and phrases; and, secondly, as to the formation of sentences.

What we have principally to pay attention to in the choice of words and phrases are, PURITY, PROPRIETY, and PRECISION.

PURITY of style consists in using those words which strictly appertain to our vernacular idiom. There are certain cases in which technical words and phrases cannot readily be dispensed with. We cannot describe a dinner of which French dishes compose the chief, or any considerable part, without using some French words or phrases; for many of the French titles of gastronomists have no correspondent words in our language. The same cause renders the use of Italian words, in a treatise on Music, and Latin words in an anatomical or pathological work, not merely justifiable, but absolutely indispensable to precise and intelligible writing. Purity, therefore, only prohibits the unnecessary use of unidiomatic words and phrases.

PROPRIETY, as Blair very truly observes, is frequently and very erroneously compared with PURITY. There is, however, a very important and considerable difference between them. Purity relates only to the idiom; propriety contemplates the selection of words from that idiom. A style is pure when the words which are used are taken solely, or with those legitimate exceptions upon which we have already remarked, from the language in which we write or speak.

injustice and ingratitude with which the long and arduous course of this eminent man's services were rewarded. One little exception may be recorded; for we find that on completing his masterpiece, the admirable church of St. Stephen, Walbrook, the parish voted a present to his lady of—twenty guineas!

But an author or speaker may be very pure as to idiom, and yet be very far from writing with propriety. He may have chosen all his words, indeed, from the language in which he writes or speaks, and yet he might have chosen the very worst words of that language. He may have chosen words which are neither obsolete nor confined to the use of the vulgar; but which, notwithstanding, are unfit for the purpose of accurately expressing his meaning. For instance, in describing the conduct of an individual, whose leg has been amputated, he may say that he suffered with great boldness; or, in relating the events of a war, he may say that a certain soldier scaled the walls of a fort with great fortitude. In each of these cases the style would be perfectly pure as to idioms; but not the less faulty as to propriety. An individual displays fortitude when passively enduring, and boldness when actually attacking. Thus we see that purity and propriety, though both relating to a good style, are, in fact, very different things. We must, however, observe, that though purity may exist without propriety, the latter cannot exist without the former.

PRECISION consists in employing such words as exactly express our meaning, and rejecting all words which are unnecessary or unconducive to that purpose. To be precise, we must take care that our words express the idea which we wish to convey—that they express the *whole* of that idea, and that they express *no more* than that idea. Young writers are too apt to suppose that words are synonymous—that is, precisely equivalent to each other in meaning, which, in fact, though they have a general resemblance, express only similar and not equivalent meanings. The truth is, that there are scarcely in any language two words which have precisely the same meaning; and those who wish to write or speak quite correctly, should carefully guard against error in the use of apparently synonymous words.

SIR ISAAC NEWTON.

It is difficult to say why we take pleasure in looking at a spot where some memorable event has taken place, or in contemplating a building where once resided a man whose memory is consecrated in the temple of Fame. The plain of Marathon, the fields of Agincourt and Waterloo, have nothing in themselves to recommend them to notice, yet, who can traverse them without feeling indescribable emotions arising in his mind: the tomb of Virgil is an ordinary structure, yet every stone that composes it possesses an interest in the bosom of the man of science and of taste.

When profound philosophy and sincere religion are united in the same person, we are constrained to look upon that individual as a genius peculiarly marked out by the Deity for a channel of communication, by which he intends to improve and benefit his rational creatures with the divine overflowings of his benevolent and vivifying spirit. Sometimes one or two in an age may break forth with a lustre of light and intelligence to illuminate the yet darkened sphere of our terrestrial abode: those are the stars of our moral and rational hemisphere, which, inspired with the glow of wisdom, are sent forth to scatter among us the elements of LIGHT and KNOWLEDGE, that we may see and know, and adore the BEING who is transcendent in wisdom, and who gives us all the enjoyments that our enlightened minds can realize and comprehend.

Sir ISAAC NEWTON, the subject of the print given herewith, was one of the greatest of those rare and uncommon



mines with which it pleases God to favour mankind, according to his divine will and pleasure, and at such times as conduce to his gracious purposes. This incomparable mathematician and philosopher was born in Lincolnshire, and finished his education at Trinity College, Cambridge. He rapidly surmounted every difficulty in Euclid's Elements; and when he had studied the works of DES CARTES with very little profit, he was stimulated by the *Arithmetica Infinitorum* of Dr. WALLIS, to the exercise of his own capacity and invention. He soon discovered the method of Fluxions, and he proceeded with zeal and ability in the establishment of those principles upon which the "System of Nature" appeared to him to be founded.

The print represents Sir ISAAC NEWTON sitting in his garden, and observing the fall of an apple, which induced him to contemplate on the law of gravitation, and the reason why all falling bodies should naturally tend towards the centre. Such a trifling circumstance to an ordinary capacity would have passed unnoticed as a common occurrence unconnected with any peculiar consideration, but with the mind of Sir Isaac, it was like the first issue of a fountain that runs on and gathers as it goes, and swells into a mighty stream; the current of his reflections pursued the course of investigation, and he sought into the depths of those things which appeared mysterious, and he seldom sought in vain; for even his scientific conjectures turned out to be practically true; not when brought to the test of mathematical demonstration; instance his opinion of the oblate spheroidal form of our globe, which after much dispute, and actual proof by measurement of a degree on the equator, and another towards the pole, was confirmed beyond all contradiction. From his youth he seems to have been formed and destined to improve and enlarge our notions of the planetary system, of general mathematics, and of philosophy in its purest essence, and upon its most correct and best principles, strictly in accordance with science and unadulterated religion; he studied the Scriptures at the same time with his "Principia," and he evinced a divine light of holiness, while he was explaining the theories of natural light and the shades of colour.

Sir ISAAC pursued an adventurous course of life, by which it was extended to beyond the common age of man. This meteor of intelligence is gone; but it has left a train behind, whose light cannot be extinguished, and that renders it immortal in the annals of science throughout the world.

No man ever contributed more to enlarge the domain of science than Sir ISAAC NEWTON; he was a

needed only to be prompted by some apparent effect, and instantly it began and pursued the train of ideas that led to the cause.

The fall of an apple was a simple circumstance, and a very common *autumnal* occurrence; any thoughtless unlettered clown would have surmised that when loosened from its spray the fruit must fall to the ground, and, as he would suppose, by reason of its weight; but if that clown could see an apple and a feather let fall together in an empty receiver, from which the air had been extracted, that is, in *vacuo*, he would be a little astonished to find the feather to descend as quickly as the apple, though he must be sensible how differently he would estimate their weight.

The truth is, that we are surrounded by wonders, and they exist in what appears to empty minds the most trifling things, but the philosopher is not content vacantly to gaze on Nature's works, and behold that they are before his eyes and observation; he feels eager to investigate and seek out the causes that produce effects, the spirit of intelligence moves within him, and he follows the course of inquiry with an ardour that bespeaks a living principle of ethereal light, shining upon and warming into vigour all his mental faculties.

Sir ISAAC NEWTON was not neglected in his lifetime, for he enjoyed the lucrative office of Master of the Mint, and was rewarded by other advantages from the sources of wealth and power: circumstances creditable to the nation whose FOX EYDORF he is, much increased, and whose name his works so much adorn and honour.

At length, having greatly exceeded the age of man, Sir Isaac expired on the 20th of March, 1727, in the 85th year of his age, and leaving behind him the character of one of the greatest philosophers that ever lived, one of the most virtuous and modest of men, scarcely conscious of the greatness of his own mind, and the vast value of his discoveries; patient under the severest calamities, and of the most unaffected piety. His remains lay in state in the Jerusalem Chamber at Westminster, and on the 20th were interred in Westminster Abbey, attended by the Lord Chancellor, the Dukes of Montrose and Roxburgh, and the Earls of Pembroke, Sussex, and Macclesfield, as pall-bearers. A noble monument has been erected to his memory.

PINNOCK'S GUIDE
TO
THE ENVIRONS OF LONDON,
COMPRISING A CIRCUIT OF TWENTY-FIVE MILES.

Abbots Langley, a village in Herts, 22 miles from London and four miles s.w. from St Albans, is situated on a hill on the east side of the river Bulbourne. *Langley Bury*, near this village, is the seat of the Rev. Sir John Filmer, Bart.

Acton, a village in Middlesex, 5 miles w. from London, on the road to Uxbridge. At the entrance to Acton, on the London side, is a public conduit endowed by T. Thorne, Esq. with 20*l.* per annum to keep it in repair.

Addington, a village in Surrey, 3 miles to the s.e. of Croydon. On the brow of the hill is a cluster of small tumuli in which have been found Roman urns, &c. In this parish is *Addington Palace*, a seat of the Archbishop of Canterbury.

Adelcombe-Place, Surrey, 1 mile e. of Croydon, is a seminary for the education of Cadets in the service of the East India Company, the number of whom is about 100. *Albans, St.* a borough in Herts, 21 miles n. from London. This was once the chief city of Britain, and was then called *Verulam*; it gave the title of Baron to the great and learned Francis Bacon.

Altiss, in Essex, $\frac{1}{2}$ s.w. from Chipping-Ongar, and 16 miles from London, the seat of J. Abby, Esq.

Amersham, 26 miles w.n.w. from London in Bucks, is a clean market town. The manufactures are lace and bed-sacking.

Anawell, a parish in Herts, 21 miles from London, and two miles s.s.e. from Ware. In this parish commences the New River, which supplies a great part of London with water.

Ankerwyke House; between this house and the Thames, in the parish of Wraybury, Bucks, is Chester Island, where King John put his signature to *Magna Charta*.

Arnos-Grove, at Southgate, Middlesex, is a delightful seat, embellished with works of art, and many curiosities.

Asco'-Heath, 6 miles s.w. from Windsor, on the road to Bagshot, is famous for its races, which commence the second week after Whitsuntide.

Ashford, 2 miles s.e. from Staines; on the common are frequent military reviews, which are much attended.

Ashbridge Park, near Little Gaddenden, Herts, has a noble mansion, built by the Duke of Bridgewater.

Ashstead, a village, 2 miles s.w. from Epsom. Near this village is Ashstead Hurst, the seat of Dr. Monroe.

Aveley, 8 miles s.e. from Romford, in Essex, is a pleasant village, with an Alms-house, built in 1639 by Lord Newbury.

Aynsford, a little village near Farningham, in Kent, 18*½* miles from London.

Bagnigge Wells, in the parish of St. Pancras, the northern suburb from London. At this place lived *Nel Gwynne*, a mistress of Charles II.; and near it, the Pinder of Wakefield. In the garden of Bagnigge Wells are two springs of mineral water. This place has long been a fashionable promenade, and place of entertainment.

Barley's, between Shough and Salthill, is a neat modern villa approached by an avenue of stately firs, the seat of the Marchioness of Thomond.

Bancroft's Alms-Houses, School, and Chapel, on the north side of Mile-end Road, in the parish of Stepney. This charity is under the trust of the Drapers' Company; the sum bequeathed by Francis Bancroft, for its foundation, was £28,000. This man was a city officer, a common informer, and a usurer, by which he amassed a large fortune.

Banstead, a village in Surrey, between Dorking and Croydon, $\frac{3}{4}$ miles s.e. from Ewell, celebrated for its walnut trees. On the downs is a course on which Epsom races are held.

Barking, a market town in Essex, 7 miles east from London. In this parish is *Bifrons*, the seat of Bamber Gascoyne, Esq., and the celebrated Fairlop-Oak.

Barnes, a village in Surrey, near the Thames, 7 miles w. from London.

Barn-Elns, the mansion of Mr. Hoare, the banker.

Barnet, a market town in Herts, and Middlesex, eleven miles n. of London. Markets on Monday. Here was fought the decisive battle between the houses of York and Lancaster, in 1471.

Barnet, East, a village in Herts, 10 miles north from London.

Barnet Friary, a village in Middlesex, between Finchley and Whetstone, one mile s.e. from the latter.

Battersea, a village in Surrey, near the Thames, 4 miles s. from London. The bridge, built in 1772, cost £20,000.

Battersea Rise, adjoining the former and to Clapham Common.

Bayfordbury, about 2 miles s.w. from Hertford, a seat of W. Barker, Esq.

Bayswater, a small hamlet, 1 mile w. from London, on the Uxbridge road.

Beaconsfield, a market town in Bucks, 23 miles w. by n. from London. Here was interred the celebrated Edmund Burke, who died July 9, 1797.

Beckenham, a village near Bromley, in Kent, $9\frac{1}{2}$ miles s. from London.

Beddington, a village in Surrey, $11\frac{1}{2}$ miles s. from London. In the neighbourhood of this place are many beautiful seats.

Bedfont, in Middlesex, $13\frac{1}{2}$ miles s.w. from London.

Beechwood Park, Herts, about 8 miles N.W. from St. Albans, the seat of Sir John Saunders Seabright, Bart., M.P.

Belmont, an elegant villa at Stanmore in Middlesex.

Belmont Castle, in Essex, 22 miles from London and one from Grays.

Betwene House, near Etith, in Kent, a seat of Lord Hardley.

Bentley Priory, Middlesex, 3 miles s.e. from Watford, belonging to the Marquis of Abercorn.

Berkhamsted, a market town in Herts, 26 miles n.w. of London. The little river Bulbourne flows by this place.

Bertie-Place, Kent, near Chiselhurst, the property of Lord Viscount Sidney.

Betchworth, Surrey, 2 miles e. from Dorking, is a small village.

Bethnal Green, a parish, 1 mile n.e. from the capital.

Bexley, a village in Kent, $2\frac{1}{2}$ miles w. of Deptford, and 12 miles from London. It gives the title of Lord to the family of Vansittart.

- Billerica*, a market town in Essex, 23 miles from London, eastward.
- Blackheath*, Kent, 5 miles s.e. from London, in the parishes of Greenwich, Lewisham, and Lee.
- Blackmore*, a village in Essex, between Ongar and Ingateshore, 7 miles s.w. from Chelmsford.
- Black Wall*, east from London 2½ miles, famous for its docks, &c.
- Blechingley*, Surrey, 20 miles s. of London, a small borough.
- Bockham Great*, a village near Leatherhead, in Surrey, 8½ miles s. from Ewell.
- Bow*, a village in Middlesex, two miles n. from London, near which is the river Lea.
- Bow Hill*, two miles s.e. from Dorking, in Surrey.
- Braundebrough House*, once the residence of the Margravine of Anspach, and latterly of the unfortunate Queen Caroline, consort to George IV. Situated at Hammersmith.
- Birchstead Place*, 2 miles e. from Westerham, in Kent.
- Bisley*, a village in Berks., two miles s. from Maidenhead.
- Brentford*, a market town in Middlesex, 7 miles w. from London. At this place is held the election of members of parliament for the county of Middlesex.
- Brentwood*, a market town in Essex, 18 miles e. from London. Near this town is Warley Common, famed for encampments.
- Brixton Causeway*, Surrey, 3 miles s. from London. Here is a prison and a tread-mill.
- Brecket Hall*, Herts, 3 miles s.w. from Hatfield, the seat of Lord Melbourne; neat wheel is a paper-mill, and also other mills.
- Brockley Hill*, Middlesex, 2 miles n.w. from Edgware, once a Roman station, called Sulloniacis.
- Bromley*, a market town in Kent, 9½ miles s.e. from London, on the road to Tonbridge.
- Bromley*, a village near Bow, in Middlesex, 2½ miles e. from London.
- Brompton*, Middlesex, one mile s.w. from London; it is a hamlet of Kensington.
- Brockhurst*, a village in Herts, 15 miles n. from London. This place formerly belonged to the Knights of Jerusalem.
- Brockbourn Bury*, the seat of J. B. Anquet, Esq. near the village.
- Bruce Castle*, Totternham, Middlesex, 5 miles n. from London.
- Bulstrode*, Bucks, three miles s.e. from Beaconsfield.
- Burnham*, in Bucks, a village three miles n.e. from Maidenhead.
- Bury Hill*, near Dorking, Surrey, the seat of R. Barclay, Esq.
- Bush Hill*, Middlesex, 3 or 4 miles s.w. from Edmonton; 10 miles from London.
- Bushy*, a village, one mile s.e. from Watford, in Herts. From Bushy Heath is an extensive and beautiful prospect all round the country.
- Bushy Park*, near Hampton Court, Middlesex, seven miles e. from Staines.
- Butlers Court*, Bucks, was the seat of the late Rt. Hon. Edmund Burke.
- Buxton*, a village in Surrey, 1½ miles from Chertsey, on the river Wey.
- Camberwell*, Surrey, two miles s. from London, is a very pleasant village.
- Carden Town*, in Pancras parish, v. of London.
- Camden Place*, at Chislehurst, in Kent, a seat of James Bradley. In this mansion the late Mr. Bowditch resided till his death.
- Camden House*, at Kensington, Middlesex, 2 miles w. from London.
- Canobury*, about ½ a mile n.e. of Islington church, an ancient manor.
- Canons*, Middlesex, eight miles n.w. of London, near Edgware.
- Carshalton*, Surrey, a village 11 miles s. from London, where are many springs of water, at one of which Queen Ann Boleyn once quenched her thirst.
- Chadwell*, Herts, near Ware; its several springs supply the New River.
- Chalfont St. Peters*, a village in Bucks, 21 miles w. from London.
- Chalfont St. Giles's*, 2 miles farther, where the poet Milton once resided.
- Charlton*, a village in Kent, 2 miles s. from Woolwich; here is a fair held, called Horn Fair.
- Chelsea*, a village in Surrey, 12 miles s.s.w. from London.
- Chelsea*, a village in Middlesex, near the Thames, 2 miles w. of London, famous for its noble hospital for disabled soldiers.
- Chartsey*, a market town in Surrey, 20 miles s.s.w. from London.
- Cheshunt*, Herts, a village, 13 miles n.n.e. from London.
- Cherening*, a village in Kent, 21 miles s. from London, on the road to Seven Oaks.
- Cheyneys*, Bucks, 5 miles n. from Amersham, a seat of the Duke of Bedford.
- Chigwell*, a village in Essex, 10 miles from London, on the road to Ongar.
- Chiltern Hundreds*, Bucks, are the hundreds of Burnham, Desborough, and Stoke.
- Chingford*, a village in Essex, 8 miles n. of London.
- Christhurst*, a village near Bromley, in Kent, 11 miles s.e. of London.
- Chiswick*, a village in Middlesex, 6 miles w. from London, near the Thames.
- Chiswick House*, a seat belonging to the Duke of Devonshire.
- Chudham*, a village in Kent, 19 miles s.s.e. from London.
- Clandon, East and West*, two villages in Surrey, 26 miles s. from London.
- Clapham*, a village in Surrey, 4 miles s. from London.
- Clapam Rise*, a continuation of elegant building; to the common of Clapham, from the Swan at Stockwell.
- Clapton*, a village at Hackney, near London.
- Clermont*, in Surrey, 17 miles s.w. from London, and 5 from Kingston. Here the late Princess Charlotte died in child-bed.
- Clifden House*, 2 miles n.e. from Maidenhead, was built by George Villiers, second Duke of Buckingham.
- Cobham*, a village in Surrey, 19 miles s. from London, on the road to Guildford.
- Cobham*, a village in Kent, 25 miles e.e.e. from London. Cobham Hall and Park belong to the Earl of Dorset.
- Coln Brook*, a market town, 17 miles w. from London, partly in Middlesex, and partly in Bucks.
- Coleshill*, a village, 4 miles w. of Rickmansworth, in Herts.
- Coopers Hill*, Surrey, the subject of a poem by Denham.
- Cranburn Lodge*, Berks, formerly a seat of the late Duke of Gloucester.
- Cranford Park*, Middlesex, 5 miles n.w. from Brentford.
- Crasdon*, a village in Essex, near Upminster, 16 miles e. of London.
- Craydon*, a market town in Kent, 13 miles s. from London.
- Croydon*, a market town in Surrey, 9½ miles s. from London.
- Crookhurst*, Surrey, 1½ mile n.e. of Langfield.

- Culland Grove*, at Southgate, Middlesex, the seat of Sir W. Curtis, Bart.
- Dagenham*, a village in Essex, 11 miles v. of the metropolis.
- Dalston*, a pleasant hamlet near Hackney, 2 miles n.e. from London.
- Darent*, a village in Kent, commonly called Dart; there is a river called Darent that falls into the Thames below Dartford.
- Dartford*, a post town in Kent, 14 miles s.e. from London.
- Datchet*, a village in Bucks, 8 miles w.s.w. from Colnbrook.
- Deans Hill*, 28 miles from London on the Dover road. Here the women presented branches of heps to King George II., as he passed by, in the year 1757.
- Deeping*, in Surrey, adjoining to the s.e. of Dorking.
- Denbies*, near Dorking, is remarkable for its gardens.
- Denham*, a village in Bucks, 3 miles n.w. from Uxbridge.
- Denmark Hill*, a considerable eminence near Camberwell, Surrey.
- Deptford*, situated near the Thames, s.s.r. of London, remarkable for its noble dock and ship-building.
- Dorking*, a market town in Surrey, 23 miles from London, is seated on the river Mole.
- Downe*, a village in Kent, 2 miles s.e. by e. from Farnborough.
- Dulwich*, Surrey, 3 miles s.s.e. from London, in the parish of Camberwell.
- Dulwich College*, was founded in 1614, by Mr. Edward Alleyne, a dramatic actor.
- Ealing*, a parish in Middlesex, 7 miles w. from London, near the road to Uxbridge.
- East India Docks*, 4 miles r. of London, at the extremity of Blackwall.
- Edgeware*, Middlesex, 8 miles n.w. from London; now only a village.
- Edmonton*, a village in Middlesex, 7 miles e. from London; its fair has been discontinued; it was called the Edmonton Statute.
- Effingham*, a village in Surrey, 3 miles n. e. from Leatherhead.
- Egham*, a village in Surrey, near the Thames, 18 miles w.s.w. from London: there are races on the 4th, 5th, and 6th of September.
- Elstree*, a village in Herts, 11 miles n.n.w. from London on the Edgware-road.
- Eltham*, a market town in Kent, 8 miles s. from London, on the road to Maidstone.
- Enfield*, a town in Middlesex, 11½ miles e. from London, famed for its Chase, a tract of woodland filled with deer.
- Enghfield Green*, is in the parish of Egham, but county of Bucks.
- Epping*, a town in Essex, 17 miles e. from London, famous for butter.
- Epsom*, a town in Surrey, 14 miles s.s.w. from London: there are horse-races in May and October; near Ashtead are mineral waters.
- Erith*, a village in Kent, near the Thames, 14 miles e. from London.
- Esher*, a village in Surrey, 4 miles s.w. from Kingston.
- Eton*, a village in Bucks, near the Thames, opposite Windsor, famous for its royal college and school, founded by Hen VII., 1490.
- Evergreen Hill*, at the top of Hampstead Heath, near the Spaniards, was the residence of the late Lord Erskine.
- Ewell*, a small market town in Surrey, 13 miles s.w. from London.
- Farnborough*, a post town on the high road between Bromley and Seven Oake, 14 miles s. from London.
- Fetcham*, a village near Leatherhead, in Surrey, 6 miles n.w. from Dorking, in which is the fine seat of -- Hankey, Esq.
- Finchley*, a village in Middlesex, 8 miles n.n.w. from London, near the road to St. Albans.
- Foot's-Cray Place*, Kent, 4½ miles w.s.w. from Dartford, 12 from London, in the road to Maidstone, was the residence of Viscount Castlereagh, K.G.; the neighbourhood is remarkably pleasant.
- Frogmore House*, half a mile e.s.e. from Windsor; here are five ornamental buildings; viz. the Gothic Temple, the Ruin, the Hermitage, the Temple of Solitude, and the Barn.
- Fulham*, a village in Middlesex, 4 miles s.w. from London; here is a wooden bridge over the Thames, which cost 23,075*l.*
- Gads Hill*, in the High Dover Road, 26 miles e. of the capital, and 3 miles n.n.w. from Rochester: this place, according to Shakspeare, was the scene of the marauding exploits of Prince Henry of Monmouth and his companions.
- Gaddesden Little*, Herts, about 5 miles v.w. from Hemel Hempstead.
- Gutton*, in Surrey, 2½ miles v.e. from Reigate, formerly a town, but now only a mean village.
- Godstone*, a village in Surrey, 19 miles from London, 6 w.s.w. from Westerham, in the road to Lewes.
- Gorhambury*, a manor in Herts, 2½ miles w.s.w. from St. Albans.
- Goresend*, in Kent, 21 miles r.s.e. from London, a noted place for boats, and landing of passengers, &c., from London, and from ships returning from voyages.
- Grays Thurrock*, a market-town, in Essex, 20 miles r. by s. from London.
- Green Hithe*, in Kent, 3 miles n. r. from Dartford: there are many lime kilns, the produce of which is mostly taken to London.
- Greensted*, a village, 1 mile s.w. from Chipping Ongar, in Essex.
- Greenwich*, a borough town in Kent, 5 miles r.s.e. from London, situated on the banks of the Thames; its noble and splendid hospital for disabled and superannuated seamen is known almost universally. Greenwich was the birth-place of Queen Elizabeth and her brother Edward VI.
- Grove Hill*, Camberwell, was the residence of the late Dr. Letson; this spot is traditionally accounted as the place where George Batynwell murdered his uncle.
- Guildford*, the county town of Surrey, is 28 miles s.s. from London. This place was the residence of one of the West Saxon kings. Here are horse-races in the Whitsun week. It was formerly the residence of several of our kings previous to the reign of Charles I.
- Hackney*, Middlesex, a large populous place, 2 miles n.e. from London; it has a spacious church; and in Well-street is a new and handsome chapel, dedicated to St. John, 1810. -
- Hackney Wick*, adjoins to the extensive tract of fine marsh land which borders on the river Lea in this parish.
- Hadley*, a village in Middlesex, ¾ of a mile n.n.e. from Barnet. The church is built with flint, the date is 1493.
- Haggerstone*, Middlesex, once a distinct village, is now joined to Shoreditch.
- Hainault Forest*, adjoining Epping Forest, in Essex, 2½ miles n. e. from Woodford, is a place of pleasant summer recreation.
- Harley Bury*, Herts, 19 miles n. from London; here is the new East India College.

Hall Barn, $\frac{1}{2}$ of a mile s. from Beaconsfield, in Bucks, is celebrated as the residence of Waller the poet, in the reign of Charles II.

Han Common, a hamlet in Surrey, $1\frac{1}{2}$ miles n. from Kingston.

Han, East, a village in Essex, $\frac{1}{2}$ mile e. from Barking.

Han Farm, at Weybridge, in Surrey; what is called the Virginia Water flows hither from Windsor Great Park.

Han, West, a village in Essex, 1 mile s. of Stratford. The unfortunate Dr Dodd resided here many years, and wrote the most of his publications in retirement.

Hammersmith, a village in Middlesex, 4 miles w. from London; here is a nunnery, the devotees are called English Benedictine Pines.

Hampstead, a large and populous village in Middlesex, 4 miles n.w. from London; it is situated on a hill, and has a fine and extensive prospect.

Hampton, a village in Middlesex, 7 miles e.s.e. from Staines, situated on the Thames, opposite the mouth of the river Mole. Hampton Court was built by Cardinal Wolsey, and has been the residence of royalty. William V., stadholder, being driven from his country, lived here some years.

Hampton Wick, a village in Middlesex, at the foot of Kingston Bridge.

Hanwell, a village, 8 miles w. from London, on the Uxbridge-road. Here was interred the remains of Jonas Hanway, Esq. founder of the Marine Society.

Harefield, a village in Middlesex, $4\frac{1}{2}$ miles from Uxbridge, and 20 from London. Milton's "Masque of Arcadia" was first performed here, the Countess of Derby acting as "Rural Queen." At a short distance on the river Coln, are very extensive copper works and flattening mills.

Hare-street, Essex, 1 mile n.e. from Romford, is a small rural hamlet.

Harlow, a village in Essex, $2\frac{1}{2}$ miles e.n.e. from London; here is held a fair on the 9th of September. The provision of that day, from ancient custom, is roasted pork.

Harmondsworth, a village in Middlesex, 4 miles s. from Uxbridge, remarkable for a large barn, 191 feet long by 38 broad.

Harrow on the Hill, Middlesex, 10 miles n.w. from London, chiefly celebrated for its Free Grammar School; it was founded in the reign of Queen Elizabeth, by John Lyon, a wealthy yeoman.

Hatfield, Herts, a market town, 19 miles n. from London. Hatfield House is the residence of the Marquis of Salisbury.

Havering Bower, a village in Essex, 3 miles from Romford.

Hayes, a village in Middlesex, $11\frac{1}{2}$ miles from London, $3\frac{1}{2}$ miles from Uxbridge.

Hayes Place, Kent, $1\frac{1}{2}$ mile s. from Bromley, was the seat of the great Earl of Chatham, whose son, William Pitt, was born here.

Hemel Hempstead, a market town in Herts, $22\frac{1}{2}$ miles n.w. from London, upon the river Gade.

Hendon, a village in Middlesex, 7 miles n.s.w. from London, situated on a rivulet called the Brent.

Herne Hill, on the road between Camberwell and Norwood.

Hertford, the county town of Herts, 21 miles n. from London, situated on the river Lea. The market is on Saturday. Here is a school, belonging to Christ's Hospital, London, where about 500 of the younger boys are kept.

Heston, a village of Middlesex, $10\frac{1}{2}$ miles from London, $1\frac{1}{2}$ m.n.w. of Hounslow.

Highbury House, 1 mile n. from Islington Church; called

also Jack Straw's Castle, probably on account of being a station for the adherents of that rebel.

Hightgate, Middlesex, a populous hamlet, 4 miles n.n.w. from London, in the parishes of Hornsey and Pancras; it stands on a hill, the ascent of which was so steep, that it was found necessary to cut down the hill, and level the road to a more gradual elevation than hitherto it had been.

Hillingdon, Great and Little, two villages in Middlesex, near Uxbridge. Hillingdon House was built by the Duke of Sommberg.

Hollandion, Herts, a hamlet on the river Lea, 17 miles n. from London, has a market on Thursday.

Holloway, Upper and Lower, are two hamlets in the parish of Islington. On the west side of the road is Whittington's stone, and on the other side Du Val's Lane, where that daring highwayman exercised his predatory exploits; he was executed at Tyburn, Jan. 21, 1669, in the 27th year of his age.

Homerton, Middlesex, is the eastern portion of Hackney parish.

Hornchurch, a village in Essex, $2\frac{1}{2}$ miles s.e. from Romford.

Horsenden-on-the-Hill, Essex, 19 miles s. from London, a decayed town.

Hornsey, a village in Middlesex, 5 miles n. from London.

The New River winds beautifully through this parish.

Horseley, East and West, two villages s.w. from Leatherhead.

Horton, Bucks, a village 1 mile s.w. from Colabrook.

Hounslow, Middlesex, $9\frac{1}{2}$ miles w. from London; it is a market town; there are extensive powder-mills on the Heath.

Hoxton, Middlesex, a village in the parish of Shoreditch.

Hyde Park, at the western extremity of the metropolis, adjoining to the south side of Kensington, and lying between the two roads which lead to Hounslow and to Uxbridge. It became the property of the Crown in the reign of Henry VIII. The large sheet of water called the Serpentine River was made in 1730, by order of Queen Caroline. Kensington Gardens and Palace are in the limits of this park.

Ickenham, a village in Middlesex, 2 miles n.e. from Uxbridge.

Ilford, Great and Little, Essex, two villages in the parish of Barking, $6\frac{1}{2}$ miles e.n.e. from London, in the road to Chelmsford.

Ingatestone, Essex, 23 miles e. from London, on the road to Harwich. It was formerly a market town.

Istoworth, a village in Middlesex, $8\frac{1}{2}$ miles w. from London.

Isle of Dogs, a part of Poplar parish, on the n. side of the Thames, where are the West India Docks.

Islington, a large village n. of London, with an elegant and spacious church. On the s.w. side of Islington, is the New River Head, near which is Sadler's Wells, a noted theatre. The village takes its name from the number of inns or public-houses to which travellers formerly resorted.

Iver, a village in Bucks, 3 miles s. of Uxbridge; it is contiguous to the river Coln, and has a cotton-mill, &c.

Kensington, Surrey, one of the eight precincts of Lambeth. It is greatly improved of late years, a new church and many buildings having been erected; at the Horns Tavern is an assembly-room.

Kensington, a village in Middlesex, $1\frac{1}{2}$ miles w. from Hyde Park corner. Kensington Palace is now the residence of the Duke of Sussex, and also of the Duchess of Kent, and her daughter the Princess Victoria heiress presumptive to the British throne.

Kentish Town, Middlesex, a village in the parish of Pancras, 3 miles n. from London, on the right of the road to Hampstead. At this village, in 1798, perished a man of the name of Little, for want of food, though possessed of 4000*l.* per annum.

Kenwood, Middlesex, between Hampstead and Highgate, a beautiful seat of the Earl of Mansfield : this place was purchased by Murray, first Earl of Mansfield, when Attorney-General, and some time before he was raised to the bench.

Keston, Kent, a village 5 miles from Bromley, in the road to Westerham.

Kew, Surrey, a village 7 miles w.s.w. from London. Here is a stone bridge of seven arches over the Thames. His late Majesty George III. improved the

These gardens are open to the public from Midsummer to October.

Kilburn, Middlesex, 2½ miles n.w. from London, a hamlet in the parish of Hampstead.

Kingsbury, Middlesex, 8 miles n.w. from London, a small village.

Kingsland, a hamlet partly in Hackney parish, and partly in Islington. It is now, by the increase of buildings, united with Shoreditch.

King's Langley, Herts, a village once a place of note: here was born and buried Edmund, Duke of York, son of Edward III., his wife, and several other noble personages.

Kingston-upon-Thames, Surrey, a market town, 1½ miles s.w. from London: here is a wooden bridge over the Thames.

Knightsbridge, Middlesex, the first village from London on the great Western-road. It is situated in the parishes of Chelsea, St. George, Hanover Square, and St. Margaret's, Westminster.

Knight's Hill, Surrey, 1 mile, n.e.s. from Streatham, the seat of the late Lord Chancellor Thurlow, now demolished.

Leigh, Essex, a small port for minor craft, 27 miles e. from London.

Lea (West), Essex, 22 miles e. by n. from London. Here is a beautiful prospect from Laindon Hills, commanding all the adjacent country, and the windings of the river Thames.

Laleham, Middlesex, a village between Shepperton and Staines.

Lambeth, a village in Surrey, and a very extensive parish, along the banks of the Thames, and to Norwood, Streatham, and Croydon. Here is the palace of the Archbishop of Canterbury, where Mary, Queen of James II., with her infant, took shelter beneath the tower of the church a whole hour in a rainy night on the 6th December, 1688, when flying from her persecutors. In this parish are situated the New Bethlehem Hospital for lunatics; the Coburg Theatre, in the Lower Marsh, opposite to Waterloo Bridge; the Royal Surrey Theatre in St. George's Fields, near the Obelisk; and the Royal Amphitheatre, late Astley's, near Westminster Bridge. This is now a borough, enfranchised by the late Reform Bill. It sends 2 members to Parliament.

Lambeth Palace, situated on the banks of the Thames, nearly opposite to Westminster Abbey: was founded by Archbishop Boniface in the 13th century. Archbishop Chicheley built the Lollards' Tower. In Wat Tyler's rebellion in 1381, the insurgents murdered Archbishop Sudbury at this palace, and greatly defaced the building. The Archbishops Juxon, Sheldon, Sancroft, Tillotson, Tennison, Wake, Secker, and Cornwallis, spent large sums on this ancient structure. Archbishop Laud was

once assailed here by a desperate rabble from London. During the civil war the chapel of this palace was deserted, and turned into a dancing-room, and the body of Archbishop Parker was taken out of his tomb, and buried in a dunghill; but after the restoration, it was again deposited in its former place. The author was often made a prisoner. The Earl of Essex was confined here before his commitment to the Tower in the reign of Queen Elizabeth. Here many of our celebrated and other august personages have, at different periods, been entertained.

Lambeth (South), between Lambeth and Stockwell, extending nearly a mile southward from Victoria-street-pike to Clapham-junct. The buildings in this neighbourhood have been greatly extended, even to Clapham, and along the Wandsworth road to Mitcham.

Lancaster Brown, a retired village in Hounslow, 12 miles w.s.w. London, to the right of the road to Chiswick.

Laver, the name of three parishes w.w. about 4 miles from Chipping Ongar in Essex. The illustrious philosopher John Locke died, and was interred, at High Laver, 1704.

Leatherhead, Surrey, a village 4 miles s.w. from Epsom, with a bridge of 14 arches over the river Mole, near which is a small public-house, where it is conjectured that Shelton, poet laureat to Henry VII., celebrated the famous Ale-Wife, by a poem entitled "The Nunning of Elvhor Ryming." There is a wood-cut of this dame with an inscription as follows:—

"When Shelton wore the laurel crown,
My ale pot all the Ales wives down."

Lepe, a village in Kent, 8 miles from London. In the oyster-yard stands the monument of Lord Dacre, to which his pious and affectionate widow Lady Dacre almost daily paid a visit, till it became also her *ultimus dolus*.

Leigh's Green, a pleasant village 3 miles beyond Seven Oaks, and 25 miles s.e.s. from London.

Leigh Hill, five miles w. by s. from Dorking. Here is one of the finest prospects in the world, over Surrey, Hampshire, Berkshire, part of Oxfordshire, Bucks, Hertfordshire, Middlesex, Kent, and Essex, the whole circumference being at least 200 miles.

Lewisham, a village in Kent, 5½ miles s. from London, on the road to Bromley.

Limehouse (St. Ann's), a parish in Middlesex at the eastern end of the metropolis, taken from Stepney.

Lingfield, Surrey, 4½ miles n. of East Grinstead. Here is the ancient tomb of Hugo de Bourg, earl of Kent.

Littleton, a village in Middlesex, 3 miles s.e. from Stai-

Long-Ditton, a village in Surrey, 2 miles s. of Kingston.

Longford, a hamlet of Harmondsworth in Middlesex, 15 miles w. from London, watered by the river Coln.

Loughton, Essex, a village 11 miles e.n.e. from London, on the road to Epping. 1½ mile s.w. from Loughton is the celebrated Bald-faced Stag.

Low Layton, a village in Essex, on the skirts of Epping Forest, 5½ miles n.e. from London.

Malden, a village in Surrey, 4 miles s.e. from Kew. Here is a powder-mill.

Marylebone, once a country village to the n.w. of London, now forms part of the Metropolitan suburbs. This parish, with St. Pancras, has been constituted a borough under the late Reform Bill, and sends 2 members to Parliament. On the northern side is the Regent's Park, almost surrounded by elegant buildings. On the south side of the

- road to Paddington is a new church, which was opened in 1817.
- Merton**, a village in Surrey, 8 miles s.s.w. from London, in the road to Epsom; it is seated on the river Wandle. A Parliament held in Merton Abbey in 1236, enacted the famous "Provisions of Merton;" Walter de Merton, lord chancellor of England, who was born here, founded the college about 1261.
- Mickleham**, Surrey, 3 miles n. from Dorking, watered by the Mole.
- Mill Hill**, a village in Middlesex, in the parish of Hendon, $\frac{3}{4}$ miles n. from London.
- Mimms (North)**, a village in Herts, 2 miles s. from Hatfield. The manor is held of the Duchy of Lancaster.
- Mimms (South)**, a village in Middlesex, 15 miles n. from London, on the road to St. Albans.
- Mitthem**, a village in Surrey, 8 miles s.s.w. from London, on the road to Reigate.
- Monkey Island**, Berks, in the centre of the Thames, between Maidenhead and Windsor, 3 miles w.n.w. from the latter, in the parish of Bray; the island contains three acres of ground. Monkey-hall is the seat of P. C. Bruce, Esq., originally built by the third Duke of Marlborough.
- Morden College**, Kent, on the east side of Blackheath, in the parish of Charlton, for the support of decayed merchants, was erected by Sir John Morden, Bart., a Turkey merchant. The pensioners have a common table in the hall, but no person can be admitted under 60 years of age, of those there are about 35; but the number is regulated by the income of the estate, according to the funds it produces.
- Mortlake**, a village in Surrey, near the Thames, about 6 miles w. from London.
- Moulsay (East and West)**, two villages in Surrey, one on each side of the River Mole, nearly opposite to Hampton Court.
- Muswell Hill**, a village in Middlesex, $5\frac{1}{2}$ miles n. of London, in the parish of Hornsey. It takes its name from a well, once deemed efficacious in the cure of scrofulous and cutaneous diseases.
- Nawstock**, a village in Essex, $4\frac{1}{2}$ miles s.w. from Chipping Ongar.
- Nettleswell**, a village near Harlow in Essex, with a school for poor children.
- New-Cross**, Kent, $3\frac{1}{2}$ miles s.s.e. from London. On the canal which crosses the road are seven locks in the distance of $\frac{1}{4}$ of a mile. On Plow Garlic-hill adjoining is a telegraph that communicates with the Admiralty, and from thence to Deal.
- Newington-green**, or **Stoke Newington**, a village in Middlesex, $2\frac{1}{2}$ miles n. from London. Dr. Watts resided here 36 years, at the Manor-house, then the seat of Sir Thomas Abney. In the church-yard is a monument of the family of the late Alderman Picket.
- Newington-butts**, a village in Surrey, extending from Southwark to Kennington common. In this parish are the Almshouses of the Fishmongers' Company, and opposite thereto the busy inn called the Elephant and Castle. In the church-yard is a tomb, raised over the body of William Allen, a young man killed by a soldier near the King's Bench Prison, at the time of some riots occasioned by the imprisonment of John Wilkes, Esq.
- Northend**, a village in the parish of Fulham, Middlesex $\frac{1}{2}$ mile s.s.e. from Hammersmith.
- Northfleet**, a village in Kent, 20 miles from London, where vast quantities of lime are burnt: the best gun-flints are found here.
- Norwood**, a hamlet in Surrey, 2 miles s. from Camberwell, and 5 from London, famous for the resort of Gipsies.
- Norwood**, a village in Middlesex, 7 miles w. from London, between the roads to Uxbridge and Hounslow.
- Oaks**, the celebrated villa of the Earl of Derby, between Croydon and Dorking, Surrey, the scene of that musical drama called "The Maid of the Oaks."
- Oaklands**, formerly the seat of the late Duke of York. The late Duchess of York passed much of her time at this delightful place of retirement.
- Old Ford**, Middlesex, on the River Lea, $2\frac{1}{2}$ miles e.n.e. from London: it is in the parish of Stratford-le-Bow.
- Ongar**, the name of two adjoining parishes in Essex, Chipping-Ongar and High-Ongar, the former a market town $7\frac{1}{2}$ miles e.n.e. from Epping, the latter is about 2 miles distant from the former.
- Orpington**, a village in Kent, on the River Cray, $4\frac{1}{2}$ miles from Bromley.
- Osterley Park**, Middlesex, $1\frac{1}{2}$ mile n. from Hounslow, is the noble seat of the Earl of Jersey.
- Offord**, Kent, a village 3 miles n. of Seven Oaks, where Offa King of Mercia defeated Elothaire, King of Kent: this Offa was the treacherous murderer of Ethelbert.
- Paddington**, a village in Middlesex, 1 mile n.w. of London. Here is a large basin of the canal, with wharfs, and warehouses.
- Pancras**, an extensive parish in Middlesex, n. of London, 1 mile from Holborn-bars. Its church-yard has been long noted as a burial-place for Roman Catholics. A new church has been lately erected for this parish near Euston-square. The Foundling Hospital is in this parish. It is now united with Marylebone as a borough newly enfranchised under the provisions of the late Reform Act.
- Parsons Green**, Middlesex, a hamlet of Fulham, distant 1 mile. Here resided Samuel Richardson, distinguished as a novelist.
- Peckham**, a hamlet of Camberwell, in Surrey, $3\frac{1}{2}$ miles s.s.e. from London. It has a fair on the 21st, 22nd, and 23rd days of August.
- Pentonville**, adjoining to Islington on the w. in the parish of St. James, Clerkenwell; it has a handsome chapel, and the houses are mostly neat and commodious, standing on an eminence.
- Petersham**, a village in Surrey, $9\frac{1}{2}$ miles s.w. from London, near the Thames. There is a mount where, according to tradition, Henry VIII. stood to see the signal for Anne Boleyn's execution.
- Pinner**, Middlesex, a hamlet of Harrow on the Hill, distant 3 miles n.w. from that place.
- Plaistow**, a village near Bromley in Kent, and another of that name in Essex, 2 miles s.w. from Barking.
- Plumstead**, a village in Kent, between Woolwich and Erith, on an eminence rising from the Thames; it has a neat church.
- Polesden**, Surrey, in the parish of Great Bookham, 9 miles s.w. from Ewell. Here are some remarkably fine beech woods.
- Poplar**, a hamlet of Stepney, near the Thames, $2\frac{1}{2}$ miles e. from London. Here is a chapel, rebuilt in 1776, against the east wall of which is the monument of Robert Ainsworth, the celebrated lexicographer; also in the north aisle, executed by Flaxman, is a monument of George Steevens, Esq., an illustrator of Shakespeare. Steevens was born in this parish on the 10th May, 1738.
- Primrose Hill**, between Tottenham Court and Hampstead, where the body of Sir Edmundbury Godfrey was found after he had been assassinated.

Purfleet, Essex, 16 miles s.e. from London, near the Thames, has an extensive magazine for powder, and some lime-works.

Purley, Surrey, 2 miles from Croydon, where John Horne Tooke wrote his book called "The Diversions of Purley." Tooke was born in 1736.

Putney, Surrey, 4½ miles s.w. from London, is a pleasantly situated village, with a wooden bridge over the Thames to Fulham, erected in 1729. This was the birth-place of the unfortunate Thomas Cromwell, earl of Essex. On Putney Heath is *Bowling-Green House*, where, on the 23d January 1806, died the Right Hon. William Pitt, in the 47th year of his age.

Reinham, Essex, a village 12½ miles e. from London, in the marshes.

Ranelagh, a once-celebrated place of amusement, near the Botanic Gardens, Chelsea, but being deserted by many of the *haut ton*, it fell into disrepute, and was finally given up, the spacious rotunda and buildings being pulled down and sold in lots.

Regent's Park and Canal, on the north side of the Metropolis; the Canal passes across the Hampstead-road, through a tunnel at White Conduit House, thence, through Shoreditch, Hackney, and Bethnal Green, into the Thames at Limehouse. The Park consists of about 450 acres, and is laid out in the most tasteful style with shrubberies, elegant villas, fine roads, and sheets of water; here is a Zoological Garden for wild beasts and birds, a Colosseum, and other magnificent buildings.

Reigate, Surrey, in the vale of Hemesdale, 21 miles s. from London.

Richmond, Surrey, 9 miles w.s.w. from London; it was anciently called Sheen, which in the Saxon tongue signified resplendent. Thomson the poet, author of the "Seasons," lived and died here; in the church is a tablet to his memory: and in the church yard was interred the Rev. Gilbert Wakefield, B.A., the learned annotator on Lucretius. Richmond bears a name of importance in our regal and national history.

Rickmansworth, a market town in Herts, 18 miles n.w. from London, on the river Colne; the Grand Junction Canal passes this town. Here is a silk-mill and several paper-mills.

Ripley, Surrey, 23½ miles s. from London, in the road to Portsmouth, is a very pretty village.

Riverhead, a hamlet to Seven Oaks in Kent, named from being at the head of the Derwent.

Roding, eight parishes in the west of Essex; Abbots, Bernes, Beauchamps, Eyethorpe, High Leaden, Margaret, and White Roding: they take their name from the river Roding that flows through them.

Roehampton, Surrey, a hamlet to Putney, at the western extremity of Putney Heath. Here are many handsome villas.

Romford, a town in Essex, 11½ miles e.n.e. from London, in the road to Harwich; it is governed by a bailiff and warden; it had 3 market days in the week, Monday, Tuesday, and Wednesday; now but Wednesday.

Rotherhithe, Surrey, bordering on the Thames, between Southwark and Deptford. In the church-yard was interred the celebrated Prince *Lee Boo*, a native of the Pellew Islands, who was brought to England by Captain Wilson in 1803, and was greatly noticed by the nobility, and at court: he died of the small pox. Here are the Commercial Docks, formerly called Greenland Docks.

Runny-Mead, near Egham, Surrey. Near this place, on *Charta Island*, King John signed *Magna Charta* and

Charta de foresta; on Runny Mead are the annual Egham races.

Rye-House, Herts, in the road from Hoddesdon to Ware, 1 mile n.e. from the latter. It is noted as the place where a conspiracy was formed to assassinate Charles II. and James duke of York, the king's brother, on their return from Newmarket; for which those celebrated patriots Russell and Sidney suffered death, though by no means really implicated in the plot.

Saint George's Hill, Surrey, 1½ mile from Chertsey, was the residence of the late Right Hon. Charles James Fox, who died on the 13th September 1808, in the 88th year of his age, at Chiswick House, the seat of the Duke of Devonshire.

Southill, Bucks, 2½ miles w. from London, on the road to Bath.

Sandbridge, a village in Herts, 3 miles n. by e. from St Albans's.

Sevenoaks, Kent, a market town, 23 miles s.e.z. from London. Near this town, in 1450, the royal army, commanded by Sir Humphrey Stafford, was defeated by the rebels headed by John Cade. Here is a hospital for aged persons, and a free school for youth, called Queen Elizabeth's.

Sheen, East, Surrey, a hamlet to Mortlake, situated near the Thames, 2 miles e. from Richmond, adjoining to West Sheen.

Sheenley, a village in Hertfordshire, 2 miles n. by w. of Chipping Burnet.

Shepperton, Middlesex 19½ miles w. from London, is a pleasant village, much frequented by the lovers of angling.

Shooters Hill, Kent, 8 miles from London on the Dover Road; from the summit of this hill is a beautiful prospect.

Shorne, a village in Kent, 3½ miles s.e. from Gravesend.

In the church of this place is a curious ancient font.

Sion-Hill, in the parish of Isleworth, Middlesex, a villa of the Duke of Marlborough, with an astronomical observatory.

Sion-House, Isleworth, near the Thames, a seat of the Duke of Northumberland. At this place resided the unfortunate Lord Guilford Dudley, and Lady Jane Grey. In 1604, Sion-House was granted to Hon. J. Percey, 9th Earl of Northumberland.

Slough, a village in Bucks, 20½ miles w. from London, and 2 from Windsor. Here the celebrated Dr. Herschel pursued his astronomical researches, assisted by a royal pension. His Telescope measures 39 feet 4 inches, and is 10 inches diameter in the tube; this instrument by its construction is a powerful magnifier.

Somers Town, on the Paddington Road; here is a handsome Roman Catholic Chapel, and another of the Baptists.

Sopewell, Herts, 1 mile s. from St. Alban's. It was a nunnery, in which, according to tradition, Henry VIII. was married to Anne Boleyn, by Dr. Rowland Lee, afterwards Bishop of Lichfield and Coventry.

Southfleet, a village in Kent, 2 miles s.w. from Gravesend.

Southgate, Middlesex, 8½ miles n. from London; a hamlet in the parish of Edmonton, on the skirts of Enfield Chase.

Southweald, Essex, a village 1½ mile w.n.w. from Brentwood.

Staines, an ancient market town, 16 miles w.s.w. from London: here is the boundary stone of the jurisdiction held by the city of London over the conservancy of the Thames, the date inscribed on it 1280.

Starmore, a village 10 miles n.w. from London, in the road to Watford : some high trees on the common are said to be marks for ships sailing on the German Ocean.
Stanstead Abbots, a village in Herts, 2 miles s.e. of Ware.
Stanwell, a village in Middlesex, 2 miles n.e. from Spaines.
Stepney, a village near London, greatly increased in buildings, and extending to several hamlets. All seamen in the merchants' service pay three-pence monthly towards the poor-rates of this parish, with which also a sum is raised for the maintenance of all persons born within who can claim Stepney as their parish, & who have not obtained any other settlement.

Stockwell, a village in Surrey, 3½ miles s. from London, in the parish of Mitcham. Here are many elegant houses.

Stoke Poges, Bucks, 2 miles n.w. from Slough, is a large scattered village. The church-yard of this place was the scene for Mr. Gray's much-admired elegy, which was also the place of his own interment. His monument stands in the field adjoining the church-yard. Gray died in 1771.

Strand-on-the-Green, a small hamlet to Chiswick on the Thames, principally inhabited by persons connected with the traffic on the river.

Stratford, a village in Essex, 3½ miles e. from London. Here are the extensive chemical works of Messrs. Howard, Allen, and Co.

Strawberry Hill, Middlesex, near Twickenham, is an ambulance near the Thames. This place was the residence of the celebrated Mr. Walpole.

Streatham, a village in Surrey, 6 miles s. from London, in the road to Croydon.

Sunbury, Middlesex, near the Thames, 10½ miles from London.

Sundridge, a village in Kent, between Westerham and Sevenoaks.

Sunny Hill, Berks, a village in Windsor Forest, 6 miles s.s.w. from Windsor ; its medicinal wells are efficacious in paralytic affections.

Sutton, Surrey, 11 miles s.s.w. from London, in the road to Reigate.

Sussexcombe, a village in Kent, 4 miles s.s.e. from Dartford.

Sydenham, a village in Kent, 7 miles s. from London, was once famous for its medicinal wells.

Taplow, a village near Maidenhead, Bucks, 2½ miles w. from London.

Teddington, a village in Middlesex, near the Thames, 12 miles w.s.w. from London. Here was interred the body of Paul Whitehead, Esq. poet laureat, who died December 30th, 1774.

Thames Ditton, a village in Surrey, 2½ miles s. from Kingston.

Theobalds, a hamlet near the New River, in the parish of Cheshunt, Herts, 2 miles w.s.w. from Weltham Abbey ; at this place King James II. died, having a palace here.

Theydon Bois, Essex, a village, 1½ miles e. from London, on the left of the road to Chipping-Ongar. Theydon Mount, 16 miles e. of London, has a church with some ancient monuments.

Thorndon, East and West, Essex, two parishes between Brentwood and Horndon-on-the-Hill ; here is Thorndon Hall, the seat of Lord Petre ; a new church was built in 1731, by a late Lord Petre.

Thorpe, a village in Surrey, between Cheitsey and Egham.
Thundridge, Herts, a village 2 miles n.e. of Ware, on the river Rib.

Tilbury, East, Essex, a parish near the Thames, below Tilbury Fort. In this parish was the ancient ferry over the Thames.

Tilbury, West, an ancient town in Essex, 3 miles e. by n. from Grays Thurrock : here Queen Elizabeth had a camp in 1588, when threatened by the Spanish Armada. On the site where she harangued her army now stands a windmill.

Tilbury Fort, opposite Gravesend, is a regular fortification to guard the entrance of the Thames. It has 106 guns planted, of from 24 to 46 pounds. The blockhouse was built in the reign of Elizabeth.

Tottenham, Upper and Lower, 5 and 6 miles s. from London, in the road to Reigate.

Totteridge, a village, 4½ miles n. from London, in the road to Ware : the Cross here was raised upon a hillock ; whence it took the name of Tottham High Cross.

Tottington, a village in Hertfordshire, 2 miles s. from Barnet.

Tudor Green, Middlesex, 5 miles w. from London, in the parish of Chiswick.

Twickenham, a village in Middlesex, 0½ miles w.s.w. from London, is situated near the Thames, and adorned with many handsome seats. Here was the celebrated villa of Pope, but which has been entirely removed. In Twickenham Park, the great Sir Francis Bacon spent much of the early part of his life in studious retirement ; and here he entertained Queen Elizabeth, when he presented her with a sonnet in praise of the Earl of Essex. Here also Pope wrote his *Essay on Man*, his *Dunciad*, and other works of classic elegance. This estate was first purchased by Pope, in 1715, in which year he removed hither, from Bisfield in Windsor Forest. In the church at Twickenham, Mr. Pope and his parents were interred. Bishop Warburton raised a monument to his memory.

Two Waters, a village in Herts, 2 miles s.s.w. from Hemel Hempstead, at the confluence of the rivers Gade and Bulbourne. About this spot are several paper mills, where the manufacture of this article has been brought to an extraordinary perfection.

Twyford, Middlesex, 2½ miles n.w.w. from Acton. The whole parish was in the hands of the late Mr. Willan.

Tyburn, anciently a village, w. of London. It is in the parish of Paddington ; until 1783, it was the place of execution for criminals ; the last person who suffered there was William Wynn Rostland, for a forgery on the East India Company.

Vauxhall, one of the precincts of the parish of Lambeth. At Vauxhall is an iron bridge over the Thames, first opened in 1614, the cost of which was 150,000*l.* On the Middlesex side two new roads have been formed ; one connecting it with Pimlico, the other along Mill-Bank to Westminster. The gardens at Vauxhall are celebrated all over Great Britain ; they are, when lighted up, and filled with company, most enchantingly beautiful : the singing and music are in the first style of excellence.

Wandsworth, a town in Surrey, on the Wandle, 5½ miles from London.

Ware, a market town in Hertfordshire, 21 miles from London.

Watford, Hertfordshire, 15 miles from London.

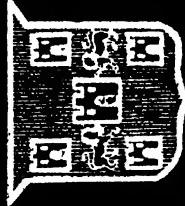
Windsor, a borough in Berkshire, on the Thames, 21 miles from London.

Woolwich, a market town in Kent, 7 miles from London.

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HAMPSHIRE



The map displays the state of New Hampshire with its county boundaries. Numerous towns are labeled throughout the state, including Concord, Manchester, Nashua, Dover, and Keene. Major roads and railroads are depicted as lines across the map. A large, ornate title cartouche is positioned at the bottom left, containing the letters 'E', 'S', 'H', 'W', and 'N'.

HAMPSHIRE.

HAMPSHIRE, more properly called the county of Southampton, is a maritime county, and one of the most agreeable, fertile, and populous in *England*. The whole county, which, in its civil and ecclesiastical jurisdiction, also comprises the isles of Wight, Jersey, Guernsey, Alderney, and Sark, was formerly called Hamtechere. Hence, it received the name of Hampshire and Hants. It is bounded on the north, by Berks; on the east, by Surrey and Sussex; on the west, by Wilts and Dorset; and on the south, by the British Channel. It is about 64 miles in length, and 150 in circumference; independent of the Isle of Wight, which is included in this county. It is divided into 39 hundreds, and contains one city, 20 market towns, 256 parishes, and 1062 villages.

The air in the higher parts is clear and pure, but towards the sea, and in the lowlands, it is inclined to moisture. The surface is beautifully varied with gently-rising hills, and fruitful valleys, adorned with numerous seats and villages, and interspersed with extensive woodlands. Indeed, there is no part of England better wooded than Hampshire, especially the New Forest; named the New by the Norman despot *William*; who, to enjoy the pleasures of the chase to greater advantage, depopulated an extent of 30 miles, without making the least reparation to the sufferers: towns, villages, and 17 parish churches, were desolated to gratify the caprice of this unprincipled tyrant. In the forest are oaks of some hundred years' growth; and notwithstanding the great consumption in the late and preceding wars, there still remains a quantity of excellent timber. Besides the New Forest, a considerable portion of this county is occupied by the Forest of Bere, and those of Holt and Woolmer. The former extends northward, from the Portsdown hills, and includes about 16,000 acres. Holt is situated on the borders of Surrey, near Farnham; and Woolmer is near Sussex, in the vicinity of Liphook. The New Forest contains about 22,000 acres. On the high lands are fed a vast number of sheep, which, though small, are rich in flavour, and are also highly valuable for their fleece. The low grounds are very productive, especially in wheat and barley. This county is also noted for its excellent honey, and furnishes the best bacon in the kingdom.

The principal rivers are, the Itchen, Avon, and Test. The Itchen rises near Alresford, and flows by Kingsworthy, Winchester, and Twyford, and falls into the Southampton Water. This river has been navigable from Winchester to Southampton as early as the Conquest. The Avon enters this county from Wiltshire, passes by Fordingbridge and Ringwood, and falls into the sea at Christchurch. The Test takes its rise in the neighbourhood of Whitchurch, passes by Stockbridge and Romsey, and forms the head of the Southampton Water.

The chief towns are, Winchester, Southampton, Portsmouth, Gosport, Andover, Lymington, Whitchurch, Basingstoke, Odilham, Alton, Petersfield, Newport, Cowes, Havant, Fareham, Romsey, Fordingbridge, Alresford, Christchurch, Kingsclere, Waltham, Litchfield, Emsworth, Wykham, Stockbridge, and Overton.

Winchester, a city of great antiquity, is situated on the right bank of the river Itchen, on the eastern declivity of a hill, gradually sloping to the river, and nearly in the centre of the county. It was called by the *Britons*, *Gwent-Caer*;

by *Ptolemy* and *Antoninus*, *Venta Belgarum*; by the *Saxons*, *Wintoncester*; and by the Latin and monkish writers, *Wintonia* and *Wentanus*. This city is supposed to have been built about 900 years before the Christian era, and was the metropolis of the *Belgæ*,* till it was reduced by the Romans. Under the *Romans*, and while in their occupation, this city became a very considerable place. Here were formerly 32 churches, of which only six remain, exclusive of the cathedral, a large, venerable, and beautiful structure. The cathedral is said to have been founded on an ancient monastery: the present edifice was begun in the eleventh century, by Bishop *Wakelyn*, and completed by *William of Wykeham*, bishop of this see in 1394. Instead of a steeple, or spire, it has only a short tower, with a flat roof, which gives it an unfinished appearance. Besides thirteen Saxon kings, here are buried King *Lucius*, *Canute*, *Hardicanute*, and *William Rufus*, Queen *Emma*, and *Richard*, the third son of the Conqueror. This cathedral also contains some of the most superb shrines and monuments in the kingdom, among which the most magnificent are those of *William of Wykeham*, *Benjamin Hoodley*, *Fox*, *Gardiner*, *Wain*, and *Cardinal Beaufort*, all bishops of this see. Queen *Boadicea* and *Alfred the Great* were buried here, as also was *Isaac Walton*, the author of the "Completo Angler." St. *Swithin* died here in 862. Dr. *Robert Lowth* was born here in 1710. Here the *Romans* kept their public archives and records; and here also they had two temples, one dedicated to *Apollo*, and the other to *Concord*. After changing masters several times, it became the capital of the West-Saxon kingdom, and on the termination of the "Saxon Heptarchy," in 828, it became the metropolis of the whole kingdom, and the seat of its prince, *Egbert*, who was crowned here. During the reign of *Ethelbald*, the *Danes* besieged it, and burnt the greater part of it to the ground. *Alfred* rebuilt, and considerably enlarged it, and *Canute* made it his capital. On the death of *William Rufus*, *Henry I.* attended a great assembly of the barons then sitting in this city, and claimed the crown of England, which in fact he seized, the barons submitting to relinquish the prior claim of his brother *Robert*, rather than involve the country in a civil war. It was during this reign that Winchester rose to the summit of her glory; for at this time, here was a stately castle, high and strong walls, many magnificent structures, and it was frequently made the royal residence. It was the residence of King *John*, during his troubles; the nativity of his son *Henry III.*; of *Arthur*, the son of *Henry VII.*; and also of *William*, duke of *Saxony*, from whom is descended our present most gracious Majesty. It was the seat of many Parliaments. It is also recorded, that the city of Winchester had a mayor 22 years before London, and that it was distinguished by the first free charter granted to any city in the kingdom. During the latter part of the reign of *Charles II.*, Winchester appeared to be regaining much of its former splendour, being the constant residence of that king, when business did not require his presence in *London*. He also purchased the site and remains of the ancient castle, and began to erect a spacious and magnificent palace, the shell of which, on a fine eminence overlooking the city and adjacent country, yet remains. It was never finished, but has been fitted up of late years for the reception of prisoners of war. It is now converted into barracks. This city covers a very considerable tract of land, but for its extent, is but thinly inhabited. Winchester is greatly noted for its college, founded by

* White City, being founded on a chalky soil. *Gwent* signifies white, *Caer*, city.

* The *Belgæ* were a people from the Low Countries now called Belgium.

William of Wykeham, for a warden, 70 scholars, 10 fellows, three chaplains, three clerks, a schoolmaster, usher, organist, and 10 choristers: the scholars are educated for New College, Oxford. This see is one of the richest in the kingdom. Among the other distinguished buildings, not already noticed, are the County Infirmary, the County-jail, and the Town-hall. In the Town-hall are preserved some very curious memorials of antiquity, among which are the original Winchester bushel and other measures given by *Edgar*, which were fixed as the standard measures for the country by succeeding princes. Winchester is 54 miles from London, by way of Farnham, Alton, and Alresford, and 62 by way of Basingstoke.

In the road to Southampton, about a mile from Winchester, is the Hospital of St. Cross, founded by a bishop of this see, for a master, nine poor brethren, and four-out-pensioners. All travellers, who call at the hospital, have a right to some bread and beer, a boon never denied them.

Alresford is a small town upon the river Itchen, about seven miles from Winchester. It consists of two parishes, called Old and New Alresford. Alresford has been twice nearly burnt by fire, but has been handsomely rebuilt. It consists of two spacious principal streets.

Alton, a pleasant and neat town, is seated on the river Wye, and also on the high-road from London to Southampton. It is about a mile in length, and consists chiefly of one principal street of well-built houses, with some minor streets, branching from it at right angles, which present to the eye of the traveller a clean and cheerful appearance. Alton is noted for its grammar school, its plantation of hops, and as being the birth-place of *Mr. Curtis*, a celebrated botanist, who was born here about the year 1746. Alton is 17 miles from Winchester, 10 from Alresford, 11 from Basingstoke, 8 from Odiham, 9 from Farnham, 12 from Petersfield, and 47 from London.

Andover is a neat well-built town, on the high road from London to Salisbury, Exeter, Plymouth, &c. Andover is chiefly noted for the fair which is held in its neighbourhood, at a village called Weyhill. For hops and sheep, it is considered the largest fair in the kingdom. It commences on the day before Old Michaelmas-day, and continues for a week. It is 16 miles from Salisbury, 14 from Winchester, and 63 from London.

Basingstoke is a considerable town, at the junction of five great roads, whence it commands a very considerable trade. It has an excellent market on Wednesday for wheat and barley, and has a great trade in malt. It is noted as the birth-place of the two excellent scholars, *Thomas* and *Joseph Wharton*. About a mile from this town is Hackwood Park, the seat of the late *Duke*, now of *Lord Bolton*. The house is a most beautiful building, and the park, which is eight miles in circumference, abounds with the most beautiful scenery. Basingstoke is 16 miles from Reading and Newbury, 18 from Winchester, and 45 from London.

Bishop's Waltham, a small town near Fareham, is distinguished for the traces of a once-magnificent castle, which was built by Bishop *Henry de Blois*, brother to *King Stephen*. It was demolished in the civil wars. The celebrated *William of Wykeham* died at his palace here in 1404, in the eightieth year of his age. A few miles from this place is *Wykeham*, where *William of Wykeham* was born in 1324. *Christchurch*, a small town on the coast, is chiefly noted for its magnificent Gothic church, which is supposed to have been erected by *Ralph Flambard*, bishop of Durham, who also built the priory in the time of *William Rufus*. Christchurch is 12 miles from Poole, and 100 from London.

Kingsclere, about seven miles from Newbury, is pleasantly situated in a fine woody country, and was formerly noted as the seat of the West Saxon kings. Near this place is *Silchester*, the once celebrated Vindonum of the Romans, and the Caer Segout of the Britons. This once-ancient city is said to have been built by *Constantius*, the son of *Constantine the Great*. Many British and Roman coins have been often found here. All that now remains of the once-celebrated *Vindonum*, are only a farm-house and church. The walls are several miles in circumference, and are still, perhaps, the most entire of any that are left of the old Roman empire.

Fareham is pleasantly situated on the north-west neck of Portsmouth Harbour, with a quay, where vessels of 200 tons can unload. It has a very considerable trade in corn, coal, &c., and cordage; also, in bricks and tiles of a very superior quality. This town is chiefly inhabited by persons employed in maritime occupations; being indebted for its whole importance to the naval establishment at Portsmouth, from which it is distant about nine miles; it is five miles from Gosport, 12 from Southampton, and 73 from London. *Litchfield* is a small town, about 3 miles from Fareham; though small, it is inhabited by many respectable families. Litchfield is chiefly noted for its church, a very spacious fabric, the workmanship of different ages. Here was formerly a celebrated abbey, which was founded by *Peter de Rupibus*, in the year 1231, who also founded another at *Seaham*, near Alton, in 1233. Upon the dissolution of the monasteries, the latter was granted to *William of Faringdon*, bishop of Winchester, who made it a part of the endowment of Magdalene College, Oxford.

Fordingbridge, formerly a much larger town than it is at present, has repeatedly suffered by fire. It is seated on the river Avon, and supports a manufacture of tickings and employment for a number of looms. It is 6 miles from Ringwood, 12 from Salisbury, 20 from Winchester, and 92 from London. *Ringwood* is a small town on the east side of the river Avon. In the *Doomsday Book* it is called Rincisede. In the Saxon times, it was a place of considerable importance; and it appears likewise to have been occupied as a military post by the Romans. It was anciently called *Magnus*, from its inhabitants *Magni*.

Gosport, an extensive and populous town, is situated upon a point of land, forming part of Portsmouth Harbour. It was formerly only a village, occupied by a few fishermen but now it has a very considerable trade, and is chiefly occupied by sailors, and by persons connected with the shipping. The connexion between Gosport and Portsmouth is preserved by the numerous little boats that ply across the harbour. Gosport is 6 miles from Fareham, and 78 from London.

Havant is a small town, situated near the sea, about 7 miles from Portsmouth, on the road to Chichester.

Newport, in the Isle of Wight, is a neat and well-built town. It is situated on the river Cowes, near the centre of the island. It has a very considerable trade. About a mile from this place is the village of Carisbrook, noted for its castle. Newport is 97 miles from London. Cowes, about four miles from Newport, is a populous sea-port, and possesses a very considerable trade. *Lymington*, is situated on an arm of the sea, which separates Hampshire from the Isle of Wight. It consists principally of one handsome street, and is much resorted to as a bathing-place.

Yarmouth, a small sea-port in the Isle of Wight, is situated opposite to Lymington. It formerly sent two members to parliament, but, by the Reform Bill, it is now disfranchised. *Ryde*, in the Isle of Wight, although only

a village, is much larger than many towns. It is beautifully situated on a declivity, sloping down to the shore opposite to Portsmouth, of which it commands an admirable view. Its beach, for bathing, is considered one of the finest in the kingdom. It contains many excellent houses; and is much frequented during the summer season. Here very handsome yachts and packets pass to and fro to Portsmouth twice a day. Boats may be had at any time.

Romsey is a considerable town on the river Test, on the high road from Salisbury to Southampton. It is divided into two parishes, *Intra* and *Extra*, between which there is only one church, which is a noble edifice, arched with stone, in the form of a cross. It is noted as the birth-place of Sir *William Petty*, ancestor of the Marquise of Lansdowne, who was born here in 1624.

Whitchurch, a small town on the borders of Chute Forest, is noted for the paper-mills in the neighbourhood belonging to *John Portal Bridges*, Esq., where the paper for the notes of the Bank of England has been manufactured since the reign of George I. It is distant from Andover 7 miles, from Newbury 13, from Winchester 14, and from London 57.

Odiham, a small town near Basingstoke, was originally a free borough, and sent members to parliament. In ancient times, it was famous for a royal palace and a castle; the former is converted into the residence of a farmer, the latter is in ruins. *David Bruce*, king of Scotland, who was taken prisoner at the battle of Neville's Cross, near Durham, was imprisoned in this castle for some time. *Odiham* is also noted as the birth-place of *Billy*, the celebrated grammarian, who was born here in 1466; and of *Pinkerton*, a famous author and geographer.

Petersfield is a small but neat town, on the great thoroughfare from London to Portsmouth. It is distant from Portsmouth 18 miles, from London 59 miles.

Stockbridge, a small mean place, is chiefly noted for wheelwrights and carpenters. There are, however, some excellent inns, from its being a considerable thoroughfare on the south-west road from London to Exeter through Salisbury.

Southampton, a large handsome town, is situated at the union of, and between, two rivers, the Test and the Itchen, which form here a fine inlet of the sea, called Southampton Water; which is capable of receiving ships of 1500 tons burthen. Southampton consists of one broad and well-built street, with some smaller ones, and contains five parish churches, and an hospital. This is one of the handsomest towns in England. It is noted as the birth-place of the pious *Dr. Watts*; and of *Charles Dibdin*, the author of many popular songs. Here are interred the remains of *Captain Calvert*, a celebrated navigator, and of *Bryant Edwards*, author of the "History of the West Indies." Southampton is now become a place of very fashionable resort, both for sea-bathing and of pleasure. It is 12 miles from Winchester, and from London by Basingstoke 75 miles, by Farnham and Bagshot 77 miles, and by Farnham and Guildford 78½ miles.

Portsmouth, the key of England, is seated on the island of Portsea, and is considered the greatest naval arsenal and fortress in the kingdom. This place owes its rise to the decay of *Poole*, which, in the time of the Romans, was a sea-port of great note. The decay of Poole arose from its harbour having been almost abandoned by the sea, when the greater part of the inhabitants removed into the island of Portsea, and built the town of Portsmouth. The harbour is made by a bay, running up between the island and an opposite peninsula, having a narrow entrance,

commanded by the town and forts; and so capacious is the harbour, that the whole of the British navy may ride in it with perfect safety. It is strongly fortified, and its importance renders it worthy of every attention. In hostile times, it is the general rendezvous of the channel fleet; and all the men-of-war are laid up here. The wet and dry docks, store-houses, rope-yards, barracks, and arsenals, are all of great size, and kept in perfect order. The town and are principally supplied by the resort of the army and navy. *Portsmouth* is *Portsea*, a town built upon the island of *Portsea*, on condition, that if the enemy should land, the houses were to be thrown down, without compensation to the owners. *Portsmouth*, *Portsea*, and *Southampton* may be considered as forming one town; as the two latter are chiefly occupied and supported by sailors, and persons depending on *Portsmouth*. The population of the whole is 53,000 souls. *Portsmouth* is distant from London 72 miles.

Overton, formerly a market and borough town, through neglect, has lost its charter.

Crondall is a small town near Farnham, and is chiefly noted for hops.

Population of the chief Towns.

Winchester	9,212
Southampton	19,324
Airesford	1,896
Alton	2,742
Andover and Parish	4,843
Basingstoke and Parish	3,581
Bishop's Waltham and Parish	2,181
Christchurch and Parish	5,344
Fareham and Parish	4,402
Fordingbridge and Parish	2,611
Havant and Parish	2,083
Kingsclere	1,800
Lymington	5,472
Odiham and Parish	3,310
Petersfield	1,803
Ringwood and Parish	4,382
Romsey	5,432
Stockbridge and Parish	851
Whitchurch	1,673
Newport and Parish	4,081
Cowes	4,491
Ryde	4,928
Yarmouth	586
Overton	1,507
Crondall and Parish	2,010
Portsmouth and Portsea	50,339
Gosport	12,637
Lyndhurst	1,266

Hampshire sends nineteen members to parliament; namely, four for the county; two for Winchester; two for Southampton; two for Portsmouth; two for Lymington; six for Andover; one for Christchurch (formerly two); two for Newport (Isle of Wight); one for Petersfield (formerly two); one for the Isle of Wight (additional).

SIR CHRISTOPHER WREN.

(Issued from page 294.)

Sir Christopher was, therefore, obliged to petition Queen Anne for the payment of his arrears; and in his petition he stated that the arbitrary proceedings of some of the commissioners had alone obstructed his measures for completing the work. The Queen handed this memorial to the commissioners themselves, for them to answer; but they merely replied by mean and paltry excuses.

Conscious, however, of his own integrity, Wren resolutely determined not to submit to the persecution of this infamous cabal: he accordingly addressed the Archbishop of Canterbury and the Bishop of London on the subject. This representation, however, brought him no redress, so that he was obliged to apply directly to Parliament, from whom he at length obtained that justice which had so long been denied him, to the eternal disgrace and infamy of those who resisted his just claims. The whole sum which was thus so long and so shamefully kept from him was £300.

But the cup of ingratitude presented to the taste of this excellent man was not yet full. The death of Queen Anne deprived him of his last royal patron; and after the accession of George I., his talents, uprightness, and eminent services to the public, were all forgotten, or at least utterly neglected. The corruption of patronage at that time is well known: the King's exclusive attachment to his German subjects and favourites deprived Sir Christopher not only of royal favour, but even of the little recompence for his labours which he had long enjoyed; and, to the lasting disgrace of that monarch, he was, in the 86th year of his age, and the 49th of his office, deprived of his patent as Surveyor-General, in favour of a minion named Benson. This worthy did not, however, long enjoy his post, since his ignorance and utter incapacity for the duties of it soon caused his disgrace and removal, and he was even marked for public persecution for his dishonesty; but the corruption which then prevailed in all court measures saved him from well-deserved punishment, and even rewarded his iniquity with reversionary grants and crown leases.

Immediately after this ungrateful return for all his services, Sir Christopher retired to his house at Hampton Court, where he spent the last five years of his life in calm tranquillity, in philosophic occupation, and in the study of the Holy Scriptures, which were both his guide and delight. His amiable disposition rendered his solitude cheerful, and he enjoyed complete repose. The vigour of his mind continued with a vivacity rarely found in persons of his age, till within a short period of his death, and not till then could he quit the great aim of his whole life, to be (to use his own words) a benefactor to mankind; his great humanity appearing to the last in benevolence and complacency, free from all moroseness, either in behaviour or aspect; he was happily endowed with such an evenness of temper, steady tranquillity, and Christian fortitude, that no injurious incidents or inquietudes of human life could ever ruffle or indispose.

His only remaining employment now was the repair of Westminster Abbey, to superintend which he occasionally went to town. One of his principal enjoyments was the being carried once a-year to view his splendid work the Cathedral, which he contemplated with all the complacent affection of a fond father: indeed, the beginning and completion of that edifice "was an event which one cannot wonder left such an impression of content on the mind of

the good old man, that it seemed to recall a memory almost deadened to every other use."

Sir Christopher enjoyed the unclouded possession of his faculties until his decease, which appears to have been as calm and placid as had been his living deportment. His advanced age must naturally have enfeebled his frame, and brought him to the verge of dissolution; but its immediate cause seems to have been a cold, which he had contracted in coming from his house to London. On the 25th of February, 1723, his servant, imagining that he slept longer than usual after dinner, entered his room, and found him dead in his chair, without any appearance of having suffered pain.

This calmly departed the eminent man (in the 91st year of his age), whose whole life had been devoted to the service of his country, and to the good of his fellow-creatures. He was not only the greatest architect of his age, but so extensive was his knowledge in all the polite arts, especially in mathematics, and so praiseworthy the uses to which he applied his attainments, so fertile was his invention, and his discoveries so numerous and useful, that he must always be esteemed a benefactor to mankind, and an ornament to his native land.

Sir Christopher was twice married; first to Faith, daughter of Sir Thomas Coghill, of Blechington, in Oxfordshire, by whom he had one son, Christopher; and secondly, to Jane, daughter of William, Lord Fitzwilliam, Baron of Axford, in Ireland; by whom he had a son named William, and a daughter.

Like many other celebrated men, his worth and fame were duly estimated when he no longer was sensible to earthly distinctions; and, having passed the latter years of his lengthened life in obscurity and neglect, his unconscious remains received the honours of a splendid funeral: they were deposited in the south aisle of the crypt of St. Paul's Cathedral, and covered with a low tomb, consisting of a Jain black slab, on which is the following inscription:—

HERE LIETH
SIR CHRISTOPHER WREN, KNT.
THE BUILDER OF THIS CATHEDRAL CHURCH OF
ST. PAUL,
WHO DIED *
IN THE YEAR OF OUR LORD
M.D.CCXXXIII,

AND OF HIS AGE XCI.

On the adjacent wall, at the head of the tomb, within a order of ovals, is a tablet with this inscription:—

Subtus tabularum
Huius ecclesie et huius conditor
Ch. Wren,
Qui viuit annos ultra nonaginta
Non sibi sed bello publico.
Lector, si monumentum queris,
Circumspice. †

It is a reproach to the nation that no other monument has ever been erected to attest the goodness and greatness of his celebrated man, since the position of the above (being the vaults) excludes them from the public eye. Conscious of this negligence, and desirous to perpetuate visibly

Sir C. Wren's tomb is supposed to mark the spot where the high altar formerly stood.

† Beneath is laid the builder of this church and city, who lived above ninety years, not for himself, but for the public good reader, if thou seekest his monument, look round.

the fame of the architect, the late Mr. Mylne, clerk of the works to St. Paul's, caused a copy of the above Latin inscription to be placed, in raised gilt letters, on a marble tablet, in front of the organ-screen.

In addition to those edifices which we have particularly mentioned in this brief memoir, and to a variety of others, Sir Christopher's principal architectural works were, St. James's Church, in Piccadilly, which, though of a mean exterior, was considered by himself as one of the best contrived of his churches, nasmuch, as its interior arrangement for facility both in seeing and hearing are admirable, and its roof is represented as a perfect model of construction and architectural economy; St. Andrew's, Holborn; St. Mary-le-Bow (Bow-church), Cheapside; St. Dunstan's in the East; and the curious pendulum ~~stone~~^{pendulum} in the upper part of the spire of Chichester Cathedral, which had forced it from its perpendicularity.

He was twice in Parliament; first for Plymouth, in Devonshire, and then for Melcombe Regis, in Dorsetshire.

This great man also distinguished himself by many curious inventions and discoveries in natural philosophy. One of his early inventions was a kind of *pendulum dialle*,^{*} for which he obtained a patent; he contrived an instrument for measuring the quantity of rain that falls on any space of land for a year; he invented many ways of registering astronomical observations more easy and accurate; he made great additions to the then recent discoveries on pendulums; he devised many curious machines for registering the changes of the weather in illustration of a History of the Seasons, which he communicated to the Royal Society; he made constant observations on the planet Saturn, and gave a true theory of that planet before Huygens published his discourse on the same subject; he made maps of the Pleiades and other stars; proposed methods to determine the great question as to the earth's motion or rest, by the small stars about the pole, which might be seen in large telescopes; effected many improvements in the theory of navigation; and was the first who made drawings of objects as seen through a microscope.

He also constructed a model of the lunar globe, as seen by the best telescope of the times, on which he represented the spots and various degrees of whiteness on the moon's surface, with the hills, eminences, and cavities; and the whole was so contrived that by turning it round to the light, it showed all the lunar phases, with the various appearances arising from the shadows of the mountains and valleys. This very curious instrument was afterwards placed in the King's cabinet.

These are but a few of Sir Christopher's studies and discoveries, since he invented, conjointly with Boyle, Hooke, and Wilkins, many of the most important experiments of the times, and a detail of all his scientific inventions would require a voluminous history. Many of them are now lost, as he printed nothing of the kind himself; but the records of the Royal Society bear ample testimony to his extensive knowledge and unwearied industry, in the commentaries which he composed on almost every subject connected with the arts of life and the abstruse sciences.

He also translated into Latin, Mr. Oughtred's *Horologio-geometrica*; and wrote a *Survey of the Cathedral Church of Salisbury*, and other pieces. After his death, his posthumous works and draughts were collected and published by his eldest son, Christopher.

* A double per-

ARCHITECTURAL RECORDS

No. I.—TEMPLES.

In the ancient ages it was the greatest pride of the proud cities of Greece and of Rome, of Egypt and of the East, to proclaim their magnificence by the grandeur of their civil structures; their riches, talents, industry, and labour, were professedly lavished upon the principal (?) decoration, and their temples presented the superb spectacle of richly ornamented porticos, stately columns, triumphal erections, and every variety of architectural display. More especially did the genius, the pride, the talent, and the wealth of the people, exhibit itself in those numerous and stupendous structures, which their superstition dedicated to illustrious, fabulous deities. It was in their temples that the glory and might of the Egyptians, the Greeks, and the Romans, more abundantly displayed themselves: these edifices drew forth every mental, personal, and public resources which their aspiring constructors possessed: they were consecrated to the mortal worship of supposed immortals, and were intended to transmit immortal fame for perishable mortality: and indeed it is principally from the ruins of these proud and splendid structures, that the present generation is practically acquainted with the architectural glories of old Greece and Rome. They will, however, in course of time, crumble into impalpable dust, as their exulting builders have, many centuries since: yet enough has remained of them, long enough, to teach instruction and analogy the pompous tale, which their ~~perish~~^{perish} beauties would have unequivocally and more fully declared; and we may still preserve, by the magic power of the press, the records which brass, and iron, and marble, and the vaunting tongues of men, are insufficient to commemorate. All these become the moulder, passive, victims of old *Chronos*; * but the press laughs at his puny power, and recreates, with tenfold fruitfulness, the forms that he in vain obliterates. For example.

Temples were edifices consecrated to the performance of divine worship: similar edifices are, in all Christian countries, denominated *churches*. Various etymologies have been suggested for the Latin word *templum*. Some derive it from the Greek "temenos," the meaning of which was the same; others from "temno," (Lat. *abscindo*,) "I cut off or separate;" a temple being a place abstracted and set apart from other uses. Others again, perhaps with more probability, do not go to the Greek at all, but seek the root of the word in the Latin verb *templare* "to contemplate."

The ancient augurs ^t undoubtedly applied the term *templa* to those parts of the heavens which were marked out for observation of the flights of birds. All temples were originally *open*; and hence, indeed, most likely, came their name.

These structures may be regarded as among the most ancient of monuments. Amongst every people, they formed the first built, and the most noticeable, of public edifices. As soon as a nation had acquired any degree of civilization, they took care to consecrate and appropriate particular spots to the worship of their deities. In the earliest instances, they contented themselves with erecting altars, either of earth or ashes, in the open air; and sometimes resorted, for the purposes of worship, into the depths of solitary woods. At length they acquired the practice of building cells or chapels, within the enclosure of which they placed the

* The name of Saturn, or time.

^t Officers who told future events.



RUINS OF ATHENS.

images of their divinities, and assembled in order to offer up their supplications as well as sacrifices. These were chiefly formed similarly to their own dwellings; the Troglodites^{*} adored their gods in grottoes; the people who lived in cabins erected edifices, the form of which was more or less assimilated to that species of habitation. *Clemens Alexandrinus* and *Eusebius* refer the origin of temples to the sepulchres built for the dead; and this notion has been latterly illustrated and confirmed, from a variety of testimonies, by Mr. Farner, in his "Treatise on the Worship of Human Spirits," p. 373, &c. *Herodotus* and *Strabo* contend that the Egyptians were the first who erected temples to the gods; and the one first erected in Greece is attributed, by Apollonius, to *Dæucalion*. The temple of *Castor* was built upon the tomb of that hero.

According to *Pausanias*, the oracle of Delphos, in remote ages, was consulted in a kind of arbour formed of laurels. That of *Jupiter*, at Dodona, rendered, at a similar era, its oracles by an old oak, as we learn both from *Pausanias* and *Herodotus*. In the vicinity of Magnesia, upon the Meander, was a grotto consecrated to *Apollo*, wherein was to be seen a very ancient statue of that god. When the Greeks, at a subsequent period, surpassed all other people in the cultivation of the arts which they had introduced from Phoenicia, Syria, and Egypt, they appropriated a considerable portion of time, care, and expense, to the building of temples, and rendering them every way worthy their destination. No country has ever surpassed, or perhaps equalled them, in this respect: the Romans alone, indeed, every thing considered, may be said to have at all successfully rivalled them; and they took the Greek structures for models.

* People living in caves.

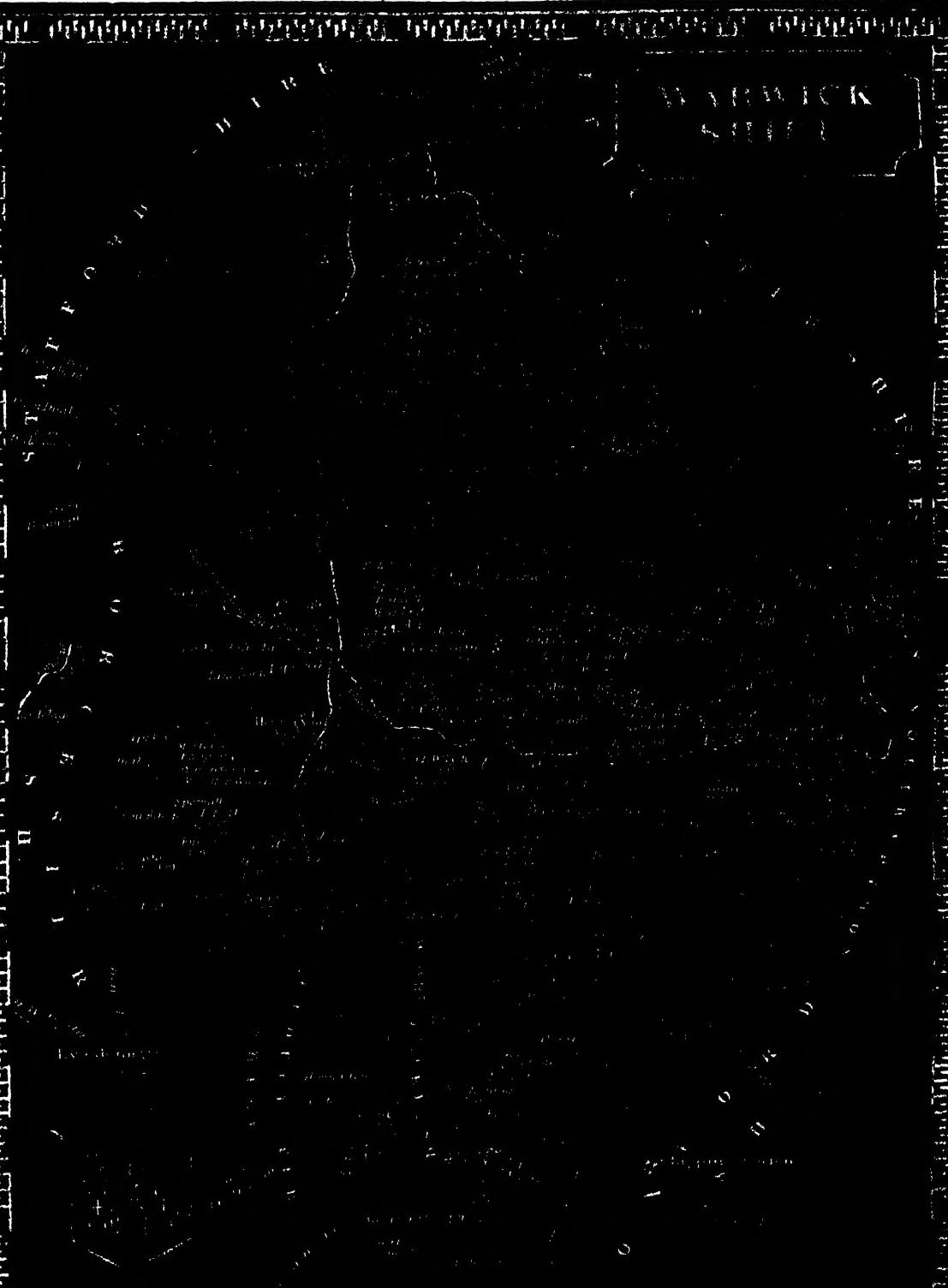
In every city of Greece, as well as in its environs and in the open country, was a considerable number of sacred temples. It is not therefore matter for surprise that the ruins of this description now existing should greatly exceed those of any other kind of building; and still less so, when it is recollect that the best materials and the utmost attention were uniformly employed upon the Græcian and Roman temples, which were thus much better enabled to resist the injuries of time. The particular divinity who was held to preside in chief over each several town, had always the most elegant and costly temple, therein especially dedicated to him or her. Instances of this are to be found in the temple of *Miterra*, at Athæa; that of *Diana*, at Ephesus; of *Apollo*, at Delphos; of *Jupiter*, at Olympia; of *Venus*, at Paphos and Cyrene; and of *Jupiter Capitolinus*, at Rome. The temples constructed in the provinces chiefly appertained to the gods of the country, or to those common to the several communities. At Pannonia was a temple of *Jupiter Heliopolitanus*, erected by the Ionian colonies imported into Africa from Asia Minor. The Dorian colonies of Asia Minor had likewise a common sanctuary; the temple of *Apollo Triopterus*, near to Mylasse, was a temple sacred to *Jupiter Carinus*, and common to the Carians, the Lydians, and the Mysians. In the territory of Stratonica was the temple of *Jupiter Chrysaorens*, appertaining to the Carians. In the immediate vicinity of these edifices, at fixed seasons, the people held assemblies for the purpose of sacrificing to the gods; they also celebrated their fêtes on the same spot, and deliberated respecting the affairs of the entire nation.

(To be continued.)

No. LI.

GUIDE TO KNOWLEDGE.

ONE PAPER



WARWICKSHIRE.

WARWICKSHIRE, an inland county, derives its name from *Warwick*, the county town, and is the most central town in England. It is one of the five counties which, in the time of the *Romans*, were inhabited by the *Cornavii*, and under the *Saxon Heptarchy* it formed part of the kingdom of Mercia. It is about 50 miles in length, 34 in breadth, and 122 in circumference. It is divided into 5 hundreds, including the liberty of Coventry, which contains 1 city, 13 market towns, 158 parishes, and 380 villages.

It is bounded on the west by Worcestershire, on the north by Staffordshire, on the east by Leicestershire and Northamptonshire, and on the south by Gloucestershire and Oxfordshire.

The air of this county is mild, pleasant, and healthy. It abounds in iron, coal, and limestone; and its cattle and sheep are numerous, and very superior. It is divided into two irregular and unequal portions by the river Avon, which crosses the county. That portion on the north side of the Avon is called the Woodland. Though much of this part is cultivated, it is still interspersed with wide heaths and barren moors, and a large portion of it bears the name of the Forest of Arden. The southern part is called Felson, a fine open and level country, of great fertility. Its waste lands are reckoned at about one-fifth. It produces considerable quantities of flax, which forms a leading article in its manufactures. Its works are also particularly noted, as are also its manufactures of stuffs, ribands, gauzes, and watches; and Birmingham, especially, has been long distinguished for its vast trade in hardware, buckles, buttons, and toys of every description, which are sent to London, and exported to all parts of the civilized world. This county is likewise noted for its numerous canals by which it communicates with the Thames, Mersey, Dee, Ribble, Ouse, Trent, Derwent, Severn, and Humber.

Its chief rivers are, the Avon, the Tame, and the Arrow. The Avon crosses it in a very meandering course from the east to the north-west; and divides it into two portions, as observed above. The Tame is in the north part of the county, and being joined by numerous other rivers near Coleshill, it flows on to Tamworth, where it is joined by the Anker. The Arrow flows through the south part of the county, and unites itself with the Avon.

The towns are, Warwick, Birmingham, Coventry, Atherstone, Coleshill, Henley, Nuneaton, Kingston, Rugby, Stratford, Southam, and Sutton Coldfield. It is divided into two dioceses; viz. Lichfield and Coventry, and Worcester, and is situated in the province of Canterbury.

Warwick, the county town, is seated on a rock of freestone, on the banks of the Avon; and the ways leading to it, from the four cardinal points, are cut through the rock. Though large and populous, it has only two churches; it formerly had six, and as many monasteries.

Warwick is chiefly noted for its castle, formerly the seat of the Earl of Warwick, which stands upon a rock on the north side of the Avon. It is still inhabited. The Romans erected in it a fort, which was destroyed by the Picts and Scots, and was several times rebuilt. The prospect from the Terrace is beautiful.

The river Avon passes close under the Castle, near which is a beautiful stone bridge. The streets of Warwick are spacious and regular, and meet in the centre of the town, which, being on the summit of a hill, is always clean. In the town hall are held the assizes and sessions. Warwick has a good trade in malt. *Guy's Cliff-house*, a mile distant

from the great cliff on the west side of the Avon, is said to be the place whither *Guy*, Earl of Warwick, retired in the days of Athelstan, after defeating Colbrand, the Dane. After his military exploits, *Guy* is said to have lived here a hermit; but the history of this period is involved in great obscurity. Warwick is 10 miles from Coventry, and 92 from London.

Birmingham, a large and populous manufacturing town, is situated on the side of a hill, nearly in the centre of the kingdom. The upper part of the town contains many new and handsome streets; but the lower part consists of old houses, workshops, and warehouses of the manufacturers. This place is a surprising and glorious instance of the advancement to which industry and ingenuity can arrive in a country blessed with a free constitution. In the year 1676, it had not even a market; but now it contains a population exceeding 146,000, and is justly esteemed one of the greatest manufacturing towns in England. In the centre of the town is a bronze statue erected in honour of *Lord Nelson*, and executed by Westmacott, at an expense of 2,500*l.*. To attempt a description of the various productions of the manufactures in Birmingham, our limits will not admit; suffice it, however, to observe, that the ponderous productions of the casting-furnace, rolling-mill, and smelting work; the smaller and more elegant variety of hardware, plated articles, toys, trinkets, and jewellery; the most beautiful fire-arms; and, in short, whatever can be desired either for ornament or utility, are abundantly supplied by this place; which *Mr. Burke* has emphatically and appropriately termed "*The Toy-Shop of Europe.*" At the Soho, belonging to the heirs of the late *Sir Matthew Bolton* and *Mr. Watt*, is a most extensive manufactory, at which are employed several thousand people, in manufacturing all the varieties of plated steel, copper, brass, toy, and other articles. The improved steam-engines made by Messrs. Bolton and Watt, may be ranked among the finest productions of laudable ingenuity. Very important advantages are derived by this town from its navigable communication with most parts of the kingdom; by which means the great expense attendant on land carriage is obviated, and the heaviest goods conveyed with facility to the most remote parts of the country. By the assistance of these canal communications, the natural products and manufactures of different parts, as well as those imported from foreign countries, are carried to market at a very small expense, which, therefore, greatly tends to improve the commerce of England. By the Reform Bill, Birmingham has been made a borough town, and sends two members to Parliament. It is 110 miles from London, through Coventry; 115 by the way of Oxford; 84 from Bristol, and 104 from Liverpool.

Coventry, a city of great antiquity, is supposed to have derived its name from a *convent* formerly situated here, and which was destroyed by the Danes in the year 1016. This city is a county of itself, and has jurisdiction over several adjoining villages. It is large and populous, and is of very considerable note in history. It is a joint bishop's see with *Lichfield*. In the fourteenth century, it was surrounded with walls, which were of great strength and grandeur, and furnished with thirty-two towers and twelve gates, which continued till the year 1681, when the greater part of them were pulled down by the order of *Charles II.* Two parliaments were held here by *HENRY IV.* and by *HENRY VI.*; the former was held in the year 1404, the latter in 1459. The city was destroyed by the Danes, in 1016, but was shortly after rebuilt. Coventry contains three churches, one of which, called *St. Michael's*, presents the most beautiful steeple in Europe. Every part of it is so finely proportioned,

that *Sir Christopher Wren* pronounced it a master-piece fore her: Sylvanus, god of the woods; Pomona, with fruit; of architecture. The streets of Coventry are in general Ceres, with corn; Bacchus, with grapes; Neptune, with his narrow, and composed of ancient buildings; the principal trident; Mars, with his arms; Apollo, with musical instruments, however, have been recently much widened, and the streets, however, have been recently much widened, and otherwise greatly improved. The celebrated cross, the admiration of antiquaries, and the ornament of the city, was taken down about sixty years since, at the expense of the inhabitants who dwelt around it. Coventry is 10 miles from Warwick, 18 from Birmingham, 27 from Lichfield, 28 from Leicester, and 92 from London.

About 6 miles from Coventry is the small town of Kenilworth, noted for its once magnificent castle, which was built by *Geoffrey de Clinton*, chamberlain and treasurer to *Henry I.*

As the writings of *Sir Walter Scott* have revived an interest in the history of this castle, which its ruinous state had caused to subside, a few observations on it may therefore afford both instruction and amusement. A reflecting mind, well acquainted with the history of an ancient edifice, feels a melancholy pleasure in wandering through its venerable ruins, picturing to himself the scenes of grandeur and revelry, which once enlivened its walls and apartments, and recalling to his recollection the personages who have figured there, as described in the pages of history. In process of time, and after a great variety of fortune, this castle, together with its extensive chase and park, came by marriage into the possession of *John of Gaunt*, when he immediately caused almost the whole of the edifice to be rebuilt in a most magnificent manner, leaving nothing of the old structure, but *Caesar's Tower*, and the outer walls and turrets towards the east end.

The son of *John of Gaunt*, having usurped the crown by the title of *Henry IV.*, Kenilworth again became an appendage to it, and so continued till *Queen Elizabeth* bestowed it on *Robert Dudley*, earl of Leicester. This nobleman expended 60,000*l.* on enlarging and improving the castle, and the chase around it, and afterwards entertained Queen Elizabeth for seventeen days at vast cost. The following account of her Majesty's reception is from an eye-witness:—

"On the 9th of July, 1575, in the evening, the Queen approached the first gate of the castle: the porter, a man tall in person, and of stern countenance, with a club and keys, accosted her Majesty in a rough speech, full of passion, in metre aptly made for the purpose, and demanded the cause of all this din and noise, and reeling about within the charge of his office. But upon seeing the Queen, as if he had been struck instantaneously, and pierced at the presence of a personage so evidently expressing heroic sovereignty, he fell down on his knees, humbly pray'd pardon for his ignorance, yields up his club and keys, and proclaims open gates and free passage to all.

"Immediately, the trumpeters, who stood on the wall, being six in number, each eight feet high, with their silvery trumpets of five feet long, sounded up a tune of welcome.

"These harmonious blasters maintained their detestable music, while the Queen rode through the tilt-yard to the grand entrance of the castle, which was washed by the lake.

"As she passed, a moveable island approached, on which sat the "Lady of the Lake," who offered up her dominion to her Majesty, which she had held since the days of King Arthur.

"This scene ended by a delectable harmony of hautboys, shalms, and cornets, with other loud musical instruments, playing while her Majesty passed into the castle-gate.

"When she entered the castle, a new scene was presented to her; several of the heathen gods brought their gifts be-

the whole. Her Majesty was graciously pleased to accept the gifts of these divinities; when was struck up a concert of flutes and soft music. When alighting from the palfrey,* she was conveyed into her chamber, when her arrival was announced through the country by a peal of cannon from the ramparts, and fire-works at night."

Here the Queen was entertained for seventeen days,† at an expense of 1,000*l.* a day. The Queen's genius seems to have been greatly consulted in the pomp and solemnity of the whole, to which some have added the entertainment of bear-baiting, &c. The great clock was stopped during her Majesty's continuance in the castle, as if time had stood still, waiting on the Queen, and seeing her subjects enjoy themselves.‡

Stratford, a large and well-built town, is usually called *Stratford-upon-Avon*, to distinguish it from several other towns in England of the same name. It is chiefly noted as the birth-place of *SHAKSPEARE* the poet. In the church is a handsome monument to his memory: and in

* A small fine horse, fit for ladies.

† During which time, the 320 hogsheads of table beer were drunk in the castle, which is merely mentioned here to show the largeness of the royal retinue.

‡ To a thinking mind, what ample room is here for reflection! For, where now, one might ask, are the tilts and tournaments, the princely shows and sports, which were once so proudly celebrated within these walls? Where are the pageants, the studied devices and emblems of curious invention, that set the court in a gaze, and even transported the high soul of our Elizabeth? Where now, the observer might say, pointing to that which was a canal, but at present only a meadow, with a small rivulet running through it,—where is the floating island, the blaze of torches that eclipsed the day, the Lady of the Lake, the silken nymphs, with all the other fantastic exhibitions? What now is become of the revely of feasting? Of the minstrelsy, that took the ear so delightfully as it babbled along the valley, or floated on the surface of the lake?

See there the smokeless kitchens, stretching to a length that might give room for the sacrifice of an *Hecatomb*,* the vaulted hall, which mirth and jollity have so often set in an uproar; the rooms of state, and the Presence-chamber, what are they now? Void and tenantless, clasped with ivy, and presenting to the eye nothing but the carcass, as it were, of its former state and greatness. And see, likewise, that proud gateway, once the mansion of a surly porter, who, partaking of the pride of his lord, made the crowds wait, and refused admittance, perhaps, to nobles, whom fear or interest drew to these walls, to pay their homage to their master. It is now the residence of a poor labourer. Yet, in this humble state, has this gateway had the fortune to outlive the glory of the rest, and has even drawn to itself the whole of that little note and credit which time has continued to this once pompous building: For while the castle itself is crumbled into shapeless ruins, which was so often profaned by the vilest uses, this outwork of greatness is left entire, and sheltered and enclosed in from bird and beast, and even affords some decent rooms, in which the face is not ashamed to show itself. There is yet something more that renders this view memorable. It brings to mind the fraud, the rapine, the insolence of the potent minister, who vainly thought to immortalize his ill-gotten glory by this proud monument. Nay, further, it awakens our indignation against the prosperous tyranny of those wretched times, and creates a general pleasure in reflecting on the happiness we enjoy under a more just and equal government. Who can see the remains of that greatness which arose in the past ages on the ruin of public freedom and private property, without congratulating themselves on living at a time when the meanest subject is as free and independent as those royal princes, and when his property is as secure from oppression as that of the first minister?

* In antiquity, a sacrifice of a hundred oxen, or *cattle of the same kind.

the year 1769, the town was the scene of a splendid festival, here by *Robert Bosse*, earl of Leicester, in the reign of called a *jubilee*, celebrated to the honour of this great man, *Henry II*. It is 8 miles from Coventry, and 100 from by Mr. *GARRICK*, who had gained the highest renown by representing his principal characters. Shakespeare wa buried here in 1616. The church is thought to be nearly as old a the time of the Norman conquest; but parts of it have bee at different times rebuilt. The jubilee lasted three days during which time entertainments of oratorios, concerts pageants, fireworks, &c. were presented to a very numerou and brilliant company, among whom were many persons o high rank and consideration of both sexes, and of approved taste. It is 92 miles from London.

Henley-in-Arden, consisting chiefly of one long street, is situated in the ancient Forest of Arden, whence its name Near this town flows the river Avon. It was burnt down about the time of the battle of Evesham; but in the reign of Edward I. it recovered, and was called the borough of Henley. It is chiefly noted as the birth-place of *Somerville*, author of "The Chase," who was born in 1692, and died in 1723.

Rugby, a small town, is seated on the south side of the river Avon. This place was anciently written Rocheberie, which signifies a castle or house on a rock. Here was formerly a small castle, of which only the outworks remain. The castle is supposed to have been erected in the reign of King Stephen. It is chiefly noted for its grammar school, which is richly endowed for 300 boys. It was founded by *Lawrence Sheriff*, a native of Brownsover, a village in the neighbourhood. Sheriff is supposed to have been originally a baker, who went to reside in London, but afterwards became a haberdasher, in the reign of Queen Elizabeth. It is 14 miles from Warwick, and 85 from London.

Leamington, so called from being seated on the river Leam, is a celebrated watering-place, about two miles from Warwick. Although only a village, it is much larger than many towns, and contains numerous handsome buildings. Here is an elegant pump-room, and assembly-room, warm and cold baths, and other accommodations. It is 90 miles from London.

Kinton, a small town, is chiefly noted for its having been in the possession of the kings of England, particularly of Edward the Confessor, and William the Conqueror. King John sometimes kept his court here, in the castle; and near the town is a spring called King John's Well.

Sutton Colefield, is a small town, 8 miles from Birmingham. The additional name of Colefield is supposed to be derived from a bleak and barren common, the greater part of which is now enclosed. It is a place of great antiquity, and was known in the time of the Saxons. It formerly belonged to *Edwin*, earl of Mercia: and, after the Norman invasion, to William the Conqueror, who gave it in exchange to *Roger*, earl of Warwick, for the manors of Hockham and Langham in Rutlandshire.

Atherstone, is a small town, situated near the river Anker, and on the high road from London to Derby. It consists chiefly of one street. It is a very considerable thoroughfare, and hence it has a great number of inns. Its inhabitants are chiefly employed in manufacturing hats, ribands, tam-mies, and shalloons. Atherstone is remarkable in history, as the place where the *Earl of Richmond* and his partisans held a council the night preceding the important battle of Bosworth-field, where he gained a decisive victory over the tyrannical *Richard III*.

Nuneaton, is a considerable town on the river Anker, at the northern extremity of the county, bordering on Leicestershire. This place was originally called Eaton, and had the term Nun prefixed to it from a convent of nuns, founded

Population of the chief Towns.

Warwick	9,109
Birmingham	146,986
Coventry	27,070
Stratford-upon-Avon	3,488
Henley-in-Arden	1,214
Atherstone	3,870
Nuneaton and Parish	7,799
Rugby and Parish.....	2,501
Sutton-Colefield and Parish.....	3,684

Warwickshire sends 10 members to parliament; viz. 4 for the county, 2 for Birmingham, 2 for Warwick, and 2 for Coventry.

IGNORANCE.

IGNORANCE is want of knowledge; or unskilfulness in any pursuits. It is either voluntary or involuntary; if we remain voluntarily **IGNORANT** of that which it is our duty or our advantage to know, it is a fault; if involuntarily, and ye have no means of acquiring **KNOWLEDGE**, it is a misfortune.

The mind of man is almost incessantly active; he is not endowed with instinct, like the brutes; in his infancy and early youth, he is ignorant and unable to provide for himself, or to guard against injuries and misfortunes; his mental powers are inert until called into action by degrees, and they generally take their bias from **EDUCATION**.

In the early ages of the world, valuable **KNOWLEDGE** was rare; men attended more to the cultivation of their bodies than their minds; corporeal strength and brutal courage were the endowments chiefly sought; and he who could lead forth his predatory bands to plunder with most success, could exhibit the greatest feats of personal prowess, and could endure fatigue and hardships with the least inconvenience, was esteemed the most worthy of respect and obedience.

If it been truly said, "**IGNORANCE**" is the mother of superstition; the **ignorant** of men thus left uninstructed with **KNOWLEDGE** were ready to receive as truth, the most improbable tales, the most absurd fictions. Craft practising on **IGNORANCE**, peopled HEAVEN with *gods* and *demigods*, whose characters were anything but worthy of divine honours; and the same means originated the belief in prodigies and miracles, with which those times so wonderfully abounded. To this excessive **IGNORANCE** of the common people is to be attributed the rapid progress of the many *false religions* which overran the world; a favoured few, who, by dint of strong mental abilities and close observation of NATURE, had obtained the **KNOWLEDGE** of some of her phenomena, used this knowledge to impress on the minds of the multitude an idea that they were possessed of supernatural powers, and thus either terrified or cajoled them into a belief in the absurdities they propagated. Could anything but the most profound **IGNORANCE** have induced men to credit the incongruous fictions which represented *JUPITER* as the **ETERNAL**, although born in *Crete*; as the **ALMIGHTY FATHER**, although, in numerous instances, his power was controlled by the **FATES**, and by circumstances; as the **omniscient GOD**, although many things were transacted without his knowledge lest he should be displeased if made acquainted with them. Such contradictions abound in the

MYTHOLOGY of all the nations of antiquity, the **SYSTEMS** of which were founded in, and supported by, **IGNORANCE**; before the **SUN OF KNOWLEDGE** they melt away like the mists of the morning, and as that advances towards its meridian, **REAL RELIGION**, which has the *true God* for its author, will keep pace with it. **IDIOTERY** and superstition will vanish; **MEN** will no longer hate and persecute their fellow men, because they ridicule and denounce one species of religious folly, whilst they as tenaciously hold sacred another. This consummation is devoutly to be wished, and there is great reason to hope that it is not far distant. Wonderful efforts are making to enlighten the minds not only of our own countrymen, but distant nations, who have, till lately, possessed few of the advantages which raise men above the level of brutes, and activity and a right devotion to those powers with which the human mind is endowed.

These benevolent efforts, however, meet with strong opposition from the nature of **IGNORANCE**, and from the resistance of those who are interested in maintaining it. The worldly interests of so many are involved in the existence of popular superstitions, that, no sooner are they assailed, than an outcry is raised, and the assailants are painted in the most odious colours; prejudices, which in the minds of the ignorant are astonishingly strong, are excited against them, a deaf ear is turned to their arguments, or they are met by others so absurd and weak, that no unprejudiced and enlightened mind could, for a moment, esteem them valid. Yet, with all these obstacles to retard it **KNOWLEDGE** will advance and ultimately prevail.

For a long time, ever since the invention of **PRINTING**, **KNOWLEDGE** was unattainable by the labouring poor; unable to spare time from their fatiguing duties, and unqualified if they had time, they could not instruct their offspring themselves, nor could they afford to pay others to do it for them; the purchase of **books** was beyond their power, nor could they use them if obtained. But there is no such excuse for **IGNORANCE** now; the zealous efforts are making to disseminate **KNOWLEDGE** both in temporal and of a spiritual nature amongst that order of society, which, a few years since, had little or no hope of becoming acquainted with the instruments of **LEARNING**. **SCHOOLS**, on an improved plan, by which hundreds of children can be instructed at once, have been instituted in every place of consequence throughout the kingdom; and **SUNDAY-SCHOOLS**, for those who must labour throughout the week, have multiplied exceedingly. Cheap works have been published in which **SCIENCE** has been simplified as to bring it to the level of the meanest capacity; and have been distributed with an amazing hand, by benevolent persons, among the poor. **MANUFACTURERS' INSTITUTIONS** have been formed, in which lectures have been delivered by men of the first order.

The journeyman bricklayer is now made acquainted with the most finished rules of **ARCHITECTURE**; the bellows and the **pump-maker** may now understand the laws of **PNEUMATICS**, and learn the principles on which their engines work; and every man, who is obliged to labour for his maintenance, may become a philosopher, better informed in the **arcana** of **NATURE** and **ART**, than the most renowned sages of antiquity. But it is in the **KNOWLEDGE** of **RELIGION** and **VEHICLES** that the greatest advantages are likely to arise; poor and well-informed persons think it not beneath their to clear away the clouds of **IGNORANCE** from

the minds of the poor; to put into the hands of the once illiterate, the **BIBLE**, and well-selected pious books; to explain and enforce with disinterested zeal, the **moral duties** and the advantages which arise from their observance, both here and hereafter.

IGNORANCE is the greatest enemy to peace and good order. If we look back in the history of past times, we shall find that the era in which it most prevailed was that of tumult, rebellion, anarchy, and confusion. Ignorant minds are easily wrought on by any designing demagogue, or enthusiastic visionary; they are seduced from the path of duty, engaged in enterprises which lead to their ruin, for want of **KNOWLEDGE** to distinguish between the dictates of reason and good sense, and the ravings of fanaticism, disaffection, and treason.

From **IGNORANCE**, **MEN**, in times of commercial distress, have aggravated the existing evils, deprived themselves, by acts of violence and outrage, of even the least hope of amending their situation; they have destroyed the property of those who alone could give them employment, have burned the manufactories, and ruined the prospects of men, who were equally suffering under the vicissitudes of trade, and thus annihilated much of that wealth from which, in their calamity, their support must have been derived.

But **KNOWLEDGE** will teach them better things; it will show them that it is to their own improvidence, they, in a great measure, owe the sufferings they endure; they will learn that vicissitudes of this description must be regularly expected, and that, if they wish to pass through life in comfort and respectability, they must reserve something of the earnings of their prosperity, to support them in the time of adversity. They will see the absurdity of attributing their distress to the increase of machinery; to the consolidation of small farms into large ones, and many other causes to which ignorance is apt to impute it, and they will adopt such measures as **WISDOM** and **PRUDENCE**, best for the avoiding of such evils for the future.

IGNORANCE is likewise the parent of many fears and mental miseries which **KNOWLEDGE** removes, as the mists of the morning are dissipated by the sunbeams. What terrors, what terrible forebodings did eclipses and comets once occasion! How did whole nations tremble when they witnessed these phenomena, for which they could not account! What solemn processions, what vows and prayers, were made, and what sacrifices were offered, to avert the calamities they were supposed to threaten! Everything that happened amiss, every disaster that occurred, was attributed to their influence. But **KNOWLEDGE** has dispelled this illusion, has convinced mankind that they arise from natural causes; and eclipses and comets are now regarded with curiosity only, and inspire neither apprehension nor astonishment.

Yet there are many persons, even in this age of information, who, from the **IGNORANCE** of the nature of electricity, tremble at the rolling of thunder, though they little regard the lightning's flash; they are not aware that, with the flash, the danger passed away; and that the thunder is merely the report of the explosion echoed from cloud to cloud: from **IGNORANCE**, likewise, many expose themselves to imminent danger from this destructive phenomenon, by seeking shelter under trees, or under conductors of electricity in a thunder-storm. **KNOWLEDGE**, in this respect, may save a multitude of lives.

Volumes may be written on the evils arising from **IGNORANCE**, and the subject be far from exhausted. But there are some cases in which **IGNORANCE** is an advantage. The **ALLEGORY** has wisely hidden from us the

KNOWLEDGE of future events, and all our prying curiosity is in vain to attain it. Could our anxiety to explore the secrets of futurity be gratified, we should have little cause to rejoice in the boon. It would add to our unhappiness, without affording one real advantage.

IGNORANCE of the fraud, the chicanery, and vices of the world, except so far as is necessary to guard us against the effects of them, is highly desirable; strong and virtuous minds are grieved at the depravity of the mass of mankind, but weak ones are apt to be deteriorated by such knowledge; they sometimes, by frequently contemplating vice, lose much of that virtuous honour with which they at first regarded it, and not unfrequently are at length tempted to practise that at which they once shuddered.

"Where ignorance is bliss,
'Tis folly to be wise."

ARCHITECTURAL RECORDS.

No. I.—TEMPLES.

(Continued from page 384.)

The most ancient temples were not of great extent. On the other hand, some of them were very small. The cella was barely large enough to contain the statue of the presiding deity of the temple, and, occasionally, an altar in addition. Even in succeeding ages, when the riches and power, as well as the taste and skill, of the Grecian states were augmented, this continued in a great degree to be the case. Their object, in fact, did not render extent necessary, since the priests alone entered the cella, and the people assembled without the walls. Exceptions, indeed, were made in those dedicated to the tutelary divinities of towns, or to the supreme gods, and those appropriated to the common use of various communities. This increased extent was chiefly displayed in the porticoes surrounding the cella, and was again augmented by the *peribolos*.

Vitruvius teaches us the peculiar situations and aspects which the Greeks selected for their temples; but there are numerous exceptions to his rules. According to him, however, the situations were regulated chiefly by the nature and characteristics of the various divinities. Thus the temples of *Jupiter*, *Juno*, and *Minerva*, who were considered by the inhabitants of many cities as their protecting deities, were erected on spots sufficiently elevated to enable them to overlook the whole town, or, at least, the principal part of it. *Minerva*, the tutelary deity of Athens, had her seat on the Acropolis, so that all those who came towards the city might behold it while yet afar off. The temples of *Mercury* were ordinarily in the forum, or otherwise (like those of *Isis* and *Serapis* among the Egyptians) in the market. Those of *Apollo* and *Bacchus* were placed beside the theatres. The temple of *Hercules* was commonly built near the gymnasium, the amphitheatre, or circus. Those of *Mars*, of *Venus*, and of *Vulcan*, had their place generally without the walls of the city, but near the gates. The temples of *Ceres* were likewise placed, in most instances, outside the town, in a retired and quiet place, and were visited by few persons besides such as were initiated into the mysteries of her worship. The Greeks rarely placed the temples of *Vesta* without the walls; but, on the contrary, were accustomed to select for them the most commodious and beautiful sites. The temples of *Esculapius*, however, were uniformly built in the neighbourhood of the towns, on some elevated and desirable spot, where the pure air might be

inhaled by the invalids who came to invoke the aid of the god of health. In order, says *Vitruvius*, to give to the temples the most convenient direction, relatively to all the four quarters of the horizon, the architects so constructed them as to admit of the statues of the divinity in the cella being turned towards the east, to which quarter all those who came to pray or sacrifice likewise bent their regard. When a temple was situated beside a river, its principal facade faced the streams; a similar system was also observed with respect to such as were erected beside the public ways. Sometimes the particular spot on which the temple was erected had been pointed out by an oracle or presage. In the cities, the houses of the inhabitants clustered round the temples; from this observation, however, we must except the citizens of *Sanagra* in Boeotia, who separated their dwellings altogether from the vicinity of their temples, which were not allowed to be contiguous to the places where any civic occupations were carried on.

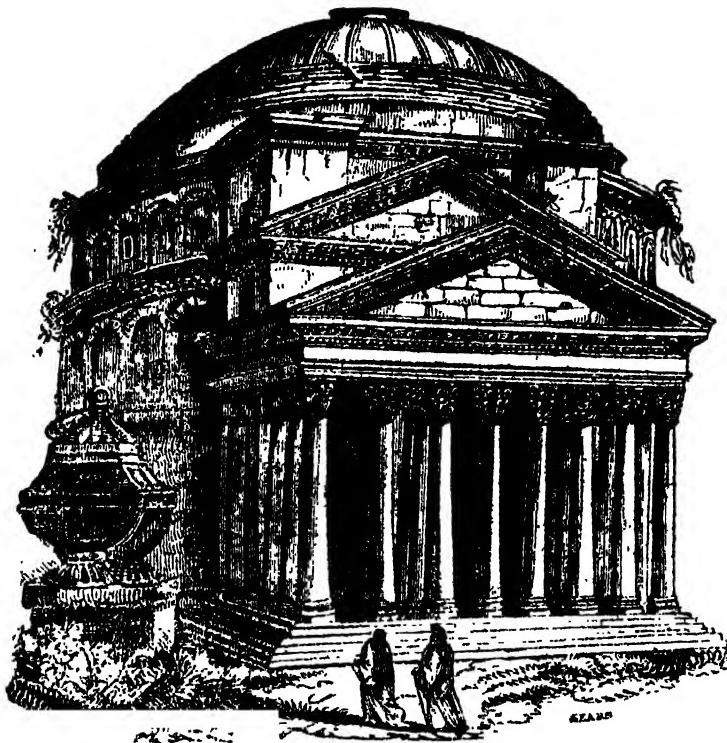
The form usually given to temples was that of a long square. Sometimes, however, the construction was circular. The length of those of the former shape was commonly double their breadth, and their cella ordinarily had porticoes at the exterior, which sometimes adorned only the anterior façade, sometimes that also of the posterior, and, occasionally, were carried round all the four sides. The anterior part of the temple, where the porch was constructed, and indeed the anterior façade, generally was denominated by the terms *Frons* (or "front") *Antrum*, *Pronaos*, and *Prodomus*. The word *Pronaos* was, however, chiefly limited to the porch. The posterior division, where, as on the opposite side, was an entrance with columns, bore the name of *Posticum* or *Opisthodomus*. Over the entablature of the columns of both fronts was a pediment.

The principal façades of the temples were always ornamented with an even number of columns; while the sides had, generally, an uneven number. The former gave the appellations of *Tetrastyle*, *Hexastyle*, *Octostyle*, &c., to the temple, according to the number of columns they contained.

The circular form was by no means common. Those temples were generally covered with a cupola, the height of which about equalled the half diameter of the entire edifice. The most celebrated instance of the circular temple is the *Pantheon* of Rome; which has some peculiarities not common to its class.

Several of the very ancient Etruscan temples have an oblong shape, or one approaching to a perfect square. In several of the ancient buildings of this character were staircases, by which they mounted to the roof. These were constructed within the walls, by the side of the entrance fronting the cella; and that they might occupy less space, they were made winding; staircases of this kind were constructed in the temple of *Jupiter* at Olympius, in the grand temple of *Pestum*, and in that of *Concord* at Agrigentum. The Egyptian temples had a species of openings or windows.

The statue of the divinity, to whom the structure was dedicated, was, as may be supposed, the most venerated and sacred object of the temple, and the most prominent ornament of the cella. It was, in almost every instance, executed by a distinguished artist, even when destined only for a small building. Several ancient authors (and, above all others, *Pausanias*) expressly say that they have discovered an abundant number of excellent statues in various parts of Greece. In the earliest instances, these statues were constructed in terra cotta, and were commonly painted red; others were of wood. In succeeding times, as



COLOSSEUM.

the fine arts advanced, iron and bronze were occasionally substituted ; but still more frequently, marble. The primitive examples of bronze statues were not cast in one single jet, but in separate pieces, afterwards joined together. Besides the statue of the presiding deity, there were generally others, either in the cella or phronaos, or both ; some of which had a special relation to the principal figure, while others merely served as ornaments.

The altar, on which the sacrifices were offered, was placed before the statue of the divinity, a little less elevated than it, and turned towards the east. Sometimes a single cella contained altars raised to several deities.

The steps, by ascending which the entrance to the temple was approached, were regarded as a very essential part of the whole. They served as a base, and at the same time distinguished the building from any one of a different description.

Delightful, to the eye of taste, are the mysterious solemn vistas of an ancient English cathedral; grand and majestic are the ruins of *Nerva's* ^{for} awfully severe, impressive, and overpowering, is the *Colosseum* of ancient Rome; elegant is the circular temple of the *Sibyl* at Tivoli, which graces, with its endless rotunda and sweetly proportioned cupola, the delightful surrounding country; magnificent are the triumphal arches and aspiring columns of imperial *Rome*!

Yet, neither the magnificence of these triumphal structures, with all their interesting associations ; nor the sweet proportions of the fane of Tivoli, with the fascinations of its scenery ; nor the grandeur of the Roman forum in its pristine perfection ; nor the majesty of the *Colosseum*, great in ruins, and sublime in dust, or filled with the whole population of a mighty city, headed by an *Augustus*, are equal in

majesty, dignity, awfulness, splendour, and perfection, to the *Temple* of the virgin goddess of the Greeks.

This temple is two hundred and twenty-seven feet* in length, which (for the purpose of immediate comparison, we mention) is only one foot short of the length from the inside of the north door of the principal transept of *St. Paul's*, to the inside of the south door of the same transept; one hundred and one feet in width, the width of the nave and aisles of *St. Paul's* on each side of the cupola, between the walls ; and sixty-five feet six inches high, to the summit of the pediment, which is somewhat higher than the bases of the Composite order of columns of the second story of *St. Paul's*, from the ground. These general dimensions may serve to give some idea of its magnitude ; but its grandeur and sublimity are not the result of its size. Its style is of the purest Dorian order.

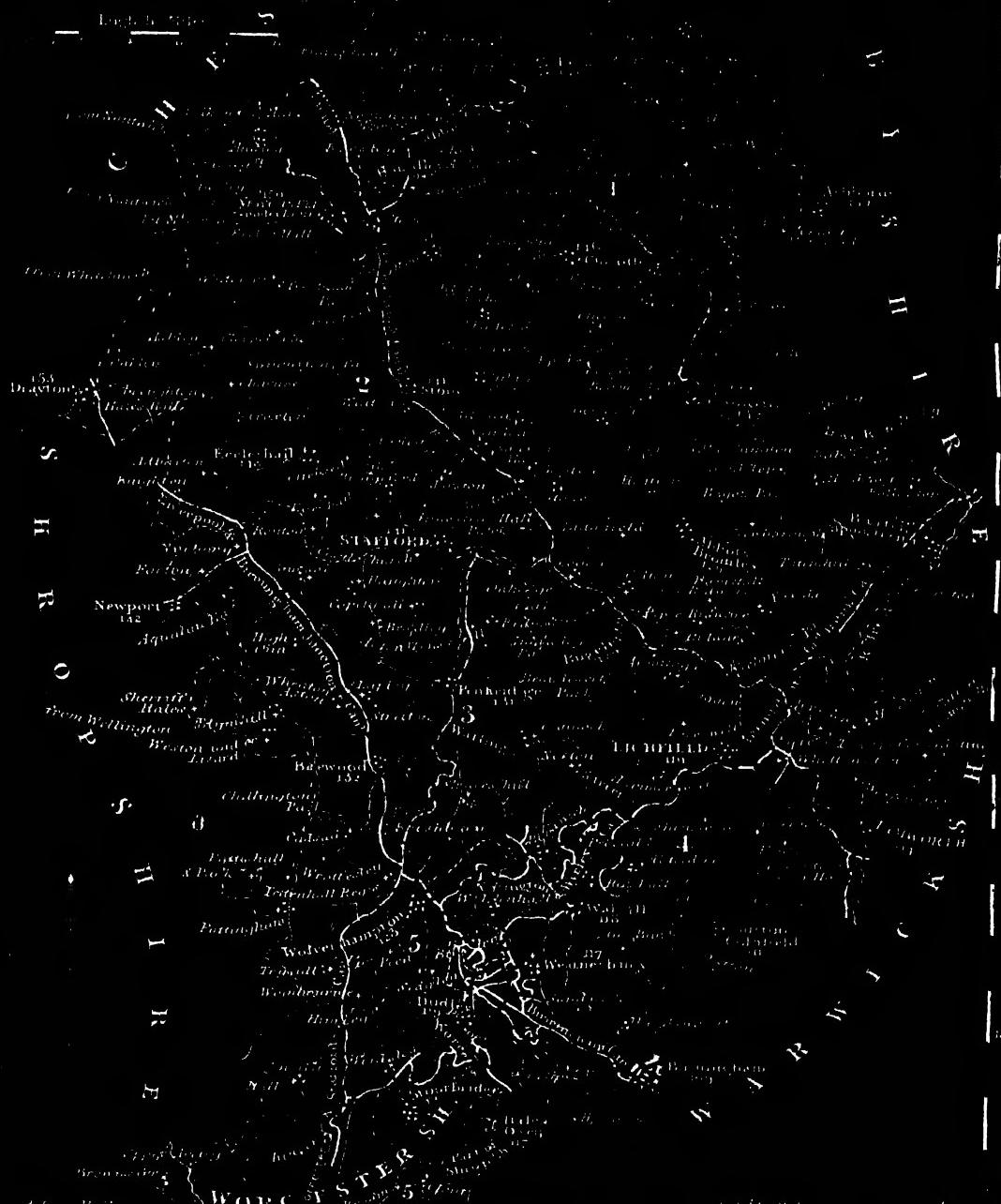
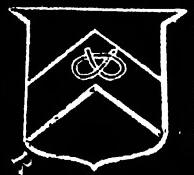
It stands upon a pavement elevated on three steps, and was originally surrounded by forty-six columns, thirty-four feet one inch high ; advanced eight feet in the front of each portico, and seventeen on each flank, including the angle.

The porticos were both surmounted by pediments filled with statuary of which some of the most glorious tenants form that collection at the British Museum, which *Canova* declared was alone worth a journey from *Rome* to see, and which formed an epoch in his style.

* Statements, however, vary somewhat respecting its exact dimensions.

(To be continued.)

**STAFFORD
SHIRE.**



STAFFORDSHIRE.

STAFFORDSHIRE, an inland county, is so called from Stafford the county town. It is bounded on the soi by Worcestershire, on the west by Shropshire and Cheshire, on the north by Cheshire, and on the east by Derbyshire. It is about 55 miles in length, 35 in breadth, and 150 in circumference. It lies in the province of Canterbury, and in the diocese of Lichfield and Coventry.

In the time of the ancient *Britons*, this county was chiefly inhabited by the *Carnavii*; under the *Romans*, it was a part of the district called *Flavia Caesariensis*; during the *Saxon Heptarchy*, it belonged to the kingdom of *Mercia*.

The air of Staffordshire, is, in general, pure and healthy, but in the mountainous parts it is sharp and cold. The middle and southern parts of the county are, for the most part, agreeably diversified with wood, arable, and pasture. The great forest of Cank, or Cannock, in the centre, has long been little better than a wide naked waste. The moor lands of the north are also wild and hilly. The southern boundaries are distinguished for their romantic beauties. This county is chiefly noted for its coal mines and iron ore. There are also quarries of stone, alabaster, and limestone. It is also famous for its potteries, its inland navigation, foundries, and different branches of iron trade. Its mines of coal and iron are rich and extensive. The seat of the Potteries, so noted for earthenware and china, is near Newcastle-under-Lyne, extending in a line of villages for about 10 miles.

The coal mines are mostly abundant in the moorlands, and the neighbourhood of Newcastle-under-Lyne, and also about Walsall, Bilston, Wolverhampton, Dudley, and Wednesbury.*

Staffordshire is divided into 5 hundreds, in which are 1 city (Lichfield), 21 market towns, and 181 parishes. Its chief rivers are the Trent, Sow, Dove, Tame, and Churnet.

Its principal towns are, Lichfield, Stafford, Wolverhampton, Walsall, Burton-upon-Trent, Stone, Tamworth, Leek, Newcastle-under-Lyne, Uttoxeter, Cheadle, Eccleshall, Penkridge, and Rugeley.

Lichfield is a neat and well-built city, situated in a valley about 3 miles south of the Trent, and is divided into two parts, which run into that river. It is both a town and county of itself, containing a jurisdiction of about 12 miles in circumference, and, jointly with Coventry, forms the see of a bishop. This city suffered greatly in the civil wars;

Lord Brooke, commander of the parliamentary forces, was shot while besieging it, in 1648. The cathedral, which was first built about the year 300, has been several times rebuilt and enlarged; and it is now considered one of the noblest Gothic structures in England. It is chiefly noted as the birth-place of the celebrated *Dr. Samuel Johnson*, the great moralist and lexicographer, whose father was a bookseller here, and had more than once been chief magistrate; *Ashmole*, a celebrated antiquary, and the founder of a famous library at Oxford; and *Bishop Newton*, the author of a "Dissertation on the Prophecies," were also among its natives.

Stafford, the county town, is situated on the river Sow. In Doomsday-book it is called a city, but it does not appear to have been incorporated before the reign of *King John*. It is noted as the birth-place of *Isaac Walton*, the celebrated

angler, who was born in 1593. Stafford is 141 miles from London.

Burton-upon-Trent, a considerable town, has long been famous for its ale, vast quantities of which are sent to all parts of the kingdom and abroad. Burton is 12 miles from Lichfield, 11 from Derby, and 124 from London.

Newcastle-under-Lyne, an ancient, populous, and improving town, derives its name from a castle, now in ruins, built in the reign of *Henry III.*, which was called New, to distinguish it from an older castle, which stood at Chesterton, a village in its neighbourhood. It is chiefly noted for its coal mines and flourishing potteries. This place was formerly much noted for a very peculiar custom, which was the putting the bridle into the mouth of a termagant, or scold, in such a manner as to deprive her of speech for the time, so leading her about the town, till she made signs of her intention to keep her tongue in better discipline for the future, and then setting her at liberty upon promise of amendment. This instrument of salutary correction is still in custody of the mayor of the town.

Bilston, a large village, and much more populous than many towns, is chiefly noted for its numerous coal pits and iron works, as is also all the country round, including Walsall, Wednesbury, Dudley, Stourbridge, Wolverhampton, &c.

Wolverhampton, a large and populous town, is noted for its manufactures of Japan ware and locks. The parish of Wolverhampton is nearly 30 miles in circuit, in which are comprehended 17 villages. It is 6 miles from Walsall, 14 from Birmingham, and 130 from London, by way of Birmingham, and 124 by way of Walsall.

About 7 miles from Wolverhampton is the small town of *Brewood*, noted for its grammar school. Amongst other eminent men educated at this school were *Richard Hurd*, late Bishop of Worcester, and *Sir Edward Lyttleton, Bart.*

Tamworth, an ancient and improving town, is divided into two parts by the river *Tame*. The western part stands in Staffordshire, and the eastern in Warwickshire. This place was formerly the royal residence of the kings of *Mercia*. There is a grammar school, founded by *Queen Elizabeth*, and a fine hospital, founded by *Mr. Guy*, who was the founder of *Guy's Hospital*, in the borough of Southwark. *Mr. Guy* was a bookseller, in London, and son of a lighterman in Horselydown, Southwark. He represented Tamworth in parliament, and it was the place of his mother's nativity. It is 117 miles from London.

Stone, a considerable town, is situated on the north bank of the river *Trent*, on the high road from London to Chester. By the means of the *Trent* this place communicates with all the great inland navigations in the kingdom. It is populous and well provided with inns. It is 140 miles from London. This town is said to have been founded by *Wulfere*, king of *Mercia*.

Uttexeter, a large and populous town, is seated on the river *Dove*, among pastures, excellent for breeding and fattening cattle. Its market, which is by far the largest in his part of the kingdom, is particularly noted for corn, cattle, sheep, butter, and cheese. Uttoxeter is 16 miles from Lichfield, 19 from Derby, and 137 from London.

Eccleshall, a small, but neat town, is situated about 7 miles from Stafford. Here is a castle, a seat of the Bishop of Lichfield and Coventry. The opulent and interesting district, called the *Potteries*, extends about 10 miles in length, and about a mile and a half in breadth, in which are found clays of great variety in colours and texture. It

is from this district that we receive all our beautiful china. The Potteries are in the vicinity of Newcastle-under-Lyne.

Tutbury, once a place of great note, about 4 miles from Burton-upon-Trent, is now fallen into decay. It was formerly famous for its castle, which is now in ruins. Tutbury Castle is seated upon a very commanding eminence. This edifice, before its demolition by *Henry III.*, was of great extent and strength. Several of its towers remain, from which are extensive prospects. It was in this castle that *Mary, Queen of Scots*, was confined in the reign of *Queen Elizabeth*. Here resided the noted *Ann Moore*, a poor woman, who pretended to have lived four years and a half without eating and drinking. By the perseverance of some incredulous gentlemen, this woman was found to be a great impostor. A.D. 1813.

Walsall, is a very considerable town, about 6 miles from Wolverhampton. It is particularly noted for bridle-bits, stirrups, and other hardware for saddlers. At the distance of about a mile from this town is *Bentley Hall*, now a farm-house, the ancient seat of *Colonel Lane*, remarkable for entertaining *Charles II.*, after the battle of Worcester, from whence *Mrs. Lane* conveyed him to the sea-side. It is 118 miles from London.

Cheadle, a small town, consisting of one principal and four smaller streets, is situated on the confines of the Moorlands, at the intersection of the roads from Newcastle-under-Lyne to Ashbourn, and from Uttoxeter to Leek. Near the town is an extensive copper foundry, belonging to the Duke of Devonshire, and the Cheadle brass-wire company's works, belonging to F. Patten, Esq. It is also noted for its manufacture of tape, and coals of an excellent quality. At about 4 miles distance from Cheadle are the remains of the ancient castle of Alveton, and at about 5 miles are the noble ruins of Croxden Abbey, founded by Bertram de Verdun. Cheadle is 12 miles from Uttoxeter, Leek, and Stone, 12 from Newcastle and Ashbourn, 15 from Stafford, and 147 from London.

Leek is situated in a mountainous part of the country, called the Moorlands, on the river Churnet. It is chiefly noted for its manufacture of thrown-silk, of bandana, and other handkerchiefs, of ribands, and silk-twist, and of cotton. The neighbouring hills abound with coal mines, from one of which issues a salt spring. Leek is 155 miles from London.

Penkridge, a small town in the central part of the county, is seated on the river Penk, from which it takes its name. This town was formerly large and populous, but is now greatly reduced. There was once a monastery. It is 130 miles from London.

Rugely, a neat and well-built town, is noted for its manufacture of hats and felts. It is near the inland navigation, which forms so extensive a chain of internal communications between all the principal rivers in England. It is 126 miles from London.

Among the most distinguished persons, natives of this county, were, *Edward Leigh*, author of the "Critica Sacra;" *Dr. Gilbert Sheldon*, Archbishop of Canterbury; *Sir Thomas Lyttleton*, the great lawyer; and *Dr. William Gifford*, Archbishop of Rheims, Duke and Peer of France.

Population of the Chief Towns.

Lichfield	6,499
Stafford.	6,998
Wolverhampton	24,531

Walsall, and parish.	15,066
Newcastle-under-Lyne.	8,192
Burton-upon-Trent, and parish	6,988
Stone, and parish.	7,808
Tamworth, and parish.	7,182
Uttoxeter, and parish	4,864
Leek, and parish	10,780
Cheadle, and parish	4,119
Eccleshall.	1,285
Penkridge.	2,351
Rugely, and parish	3,161

This county sends 17 members to parliament; viz., 4 for the county; 2 for Lichfield; 2 for Newcastle-under-Lyne; 2 for Stafford; 2 for Stoke-upon-Trent (a new borough); 2 for Tamworth; 1 for Walsall (a new borough); and 2 for Wolverhampton (a new borough).

ARCHITECTURAL RECORDS.

NO. 1—TEMPLES.

(Continued from page 392.)

A contemplation and examination of this wonderful structure, in all its bearings, would occupy too much space; and we will proceed to an examination of the principles of the style and elements of the *sacred architecture* of the Greeks; another fine example of which is the temple of *Jupiter Panellinus*, in the island of *Egina*, which was recently discovered by Messrs Cockerell, jun., Foster, Linkh, Baron Haller, and others: than which discovery of Grecian architecture and sculpture, none of modern times can be considered as more extraordinary, or more interesting and important to the history of art.

The inhabitants of the island of Egina were the first European Greeks who became considerable for their intelligence in maritime traffic. Pausanias relates, that soon after the return of the Heraclidae into Peloponnesus, the Eginetans had much commerce in Greece. Aelian, Strabo, and other authors, believe that the builders of this beautiful temple were the first among the Greeks who brought coined money into use.

The power of the Eginetans was destroyed, after a short brilliant career, by the Athenians, in the time of *Pericles*, who drove them from their island, and annihilated their wealth and power.

The sculptures of this fine temple are now at Munich, and are the property of the Prince Royal of Bavaria. They were discovered under the fragments of its architecture, where they had been concealed from the rapacious conquerors of Greece for a period of nearly two thousand years. They have been united, and the very few parts of them which were deficient restored, at Rome, by *Thorwaldsen*, the celebrated Danish sculptor.

Mr. Cockerell, in his excellent paper on these sculptures, published in the 12th No. of the Journal of Science and Arts, says, "But what may be considered of still greater interest, and that which renders the discovery of the first importance to architecture as well as to archaiology is, that they afford us a complete example of the great historical compositions of entire statuary, with which the Greeks enriched the pediments of their temples; a species of representation hitherto unknown to us, and which far exceeds, in scale and splendour of effect, any which the moderns have attempted: for the greatest efforts of art hitherto employed

in the grand pictures (the *stila machinosa*) of the Italians, cannot vie with compositions of this nature, any more than the materials by which both were effected can be compared together."

The style of these sculptures, however, is mannered, and possesses no variety of expression. "A smile is seen on all the mouths, like that of an opera-dancer; the cheeks are hollowed; the lips are thick; the nose is short, but angular and prominent; the eyes are protruded," probably for effect; "the forehead is flat and retiring; and the chin is remarkably long and rather pointed; the hair and drapery are arranged with the greatest precision.

"The style of the architecture is pure and beautiful, and its order a grand and chaste Doric. In it we find a very remarkable and very ancient example of the practice which prevailed among the Greeks, of painting their sculptures; for the style and execution of the colours of the temple prove that they cannot be of any other date than the original construction.

"In order to relieve the statues, the tympanum of the pediment was of a clear light blue: large portions of the colour were still seen on the fragments," says Mr. Smirke, "as we raised them from the ground. The moulding, both over and under the cornice, was painted; the leaf was red and white, and the superior moulding of the cornice was painted in encaustic; the colours, being on marble, and more exposed, had long disappeared; but the relief in which the part so covered was found indicated very perfectly its outline."

The Eginetans formed a school of sculpture, as afterwards did the Corinthians; who, however, may perhaps be considered to have surpassed them in point of merit.

The inhabitants of Corinth were very early distinguished for their riches and their maritime force. Few situations are more favourable for commerce than that of Corinth; and Homer and Thucydides frequently gave Corinth the epithet of opulent.

The genius and inclination of the Corinthians led them rather to cultivate commerce, and the peaceful arts, than military enterprises. Satisfied with gaining wealth by honourable means, they next sought to enjoy it with taste, and gave themselves up to the luxuries and refinements which their opulence afforded them. They applied themselves also to render their city the most beautiful and magnificent of Greece, and spared nothing to accomplish it. Corinth was filled with temples, palaces, theatres, porticos, and a vast number of other structures, as commendable for the rarity of the marbles employed in their construction, as for the elegance of their architecture. These magnificent edifices were moreover enriched with an infinite number of columns and statues of the most precious materials, and executed by the hands of the most famous masters. Luxury, opulence, and effeminacy, displayed themselves in every part of Corinth. She was, without exception, the richest and most voluptuous city that could be found in all Greece.

The invention of the Corinthian order is explained in the article on *architecture*, but of the sacred architecture of the inhabitants of Corinth we have little left to guide us. These are ruins of a grand and solemn temple of the Doric order; its style is of an early period, as the shortness of the columns with the great height and form of the architecture clearly prove. The proportions of its columns and the capitols are nearly similar to those at Pестum, while the graceful form of its echinus, and its great projection, have a very striking appearance. To the sacred architecture of the Greeks, as exhibited in their various temples, we are

indebted for the purest and the best canons of architecture that the world has ever seen.

The Egyptian temples were remarkable for the number and disposition of the columns contained in the several enclosures within the walls. The little cellar appeared like nothing but a little stable or lodging for the sacred animal to whom the building was consecrated. This was never entered but by the priests; and it is curious to observe, how confined and unpretending this heart, or kernel, of the structure, if we may so express it, is, when compared with the magnificent porticos—majificent in size, proportions, and often in style likewise. Obelisks and colossal statues were ordinarily placed before the entrance. These were sometimes preceded by alleys of sphinxes, or lions, of immense size. Near the gates were erected two mases of a pyramidal form: these were often covered with hieroglyphic bassi-relievi. A coobel, scooped out in the shape of a gorge, was the only substitute for the entablature, whether to the gate itself, or to the two lofty mases ad joining. No pediment, or shape of roof, tattered with the horizontal line of the platform above, where it is probable the priests often passed the night, according to the usage of the country. Here they had abundant opportunities for making, under a beautiful sky, those astronomical observations which occupied so considerable a part of their thoughts. Thus everything about an Egyptian temple was calculated to excite wonder and a sense of awe. The gigantic obelisks, columns, and pyramids without the endless ranges of lofty columns within—the hierophants and robed priests—all combined to weave a kind of magic charm, which the ministers of a false religion knew well how to convert to their own advantage.

The varieties of temples among the Romans were numerous; whereof those built by the kings, &c., consecrated by the augurs, and wherein the exercises of religion were originally performed, were held especially worthy of that nation. Those which were not consecrated were called *idoli*; those little temples which were covered, or roofed, were denominated *Eduenda*; and the open ones, *Stetere*. Other edifices, consecrated to particularities of their worship, received the names of *fanum*, or *dilecta*.

The Romans, in point of fact, appear to have outdone all other nations in respect to the number of their temples. They not only erected them to their gods, to their virtues, to their diseases, &c., but also to their emperors, and that even in their life-time; instances whereof we meet with in medals, inscriptions, and other monuments.

The temple of *Jerusalem* was similar in its plan to the *Tabernacle*. The first temple was begun by *Solomon*, about the year of the world 2992, and, according to some chronologers, before Christ 1012, and was finished in eight years. Great mistakes have been committed respecting the dimensions of this building, by confounding the mathematical description by Ezekiel with the plain account there, in the books of Kings and Chronicles, to which we beg to direct the attention of our readers.

The second temple of Jerusalem was built by the Jews, after their return from the Babylonish captivity, under the inspection and influence of *Zerubbabel*, their governor, and of *Joshua*, the high-priest, with the leave and encouragement of *Cyrus*, the Persian emperor, to whom Judea was now become a tributary kingdom. This temple was plundered and profaned by *Antiochus Epiphanes* (who also caused the public worship in it to cease), and afterwards purified by *Judas Maccabeus*, who restored the divine worship; and, after having stood five hundred years, it was rebuilt by *Herod*, with a magnifi-

cence approaching to that of Solomon. *Tacitus* calls it *immense opulentiae templum*, and *Josephus* says, it was the most astonishing structure he had ever seen, as well on account of its architecture as its magnitude, and likewise the richness and magnificence of its various parts, and the reputation of its sacred appurtenances. This temple, which Herod began to build about sixteen years before the birth of *Christ*, and so far completed in nine years and a half as to be fit for divine service, was at length destroyed by the Romans, on the same month and day of the month on which *Solomon's Temple* was demolished by the Babylonians.

The *Indian* temples, or pagodas, are sometimes of prodigious size. We shall treat of them more at large in a separate article.

We may remark, in conclusion, that nothing is more commonly found on ancient medals, and particularly those of the Romans, than representations, some of them very exact, of different *temples*.

BIOGRAPHY OF SIR ROBERT PEEL, BART., M.P.

REPRESENTATIVE FOR TAMWORTH,
IN STAFFORDSHIRE.

This distinguished statesman and senator is the eldest son of the late Sir Robert Peel, whose memoir we have given at page 311, in a former number of the "The Guide to Knowledge;" and we now proceed, agreeably to our promise, to give some account of his son.

Sir Robert was born about the year 1788, when his mother was yet under 19 years of age, she having been married to his late father at only 17; but though young, this lady possessed qualifications often wanting in persons of riper years; and, no doubt, was capable of fulfilling the office of a matron: her first-born son, whose life we are about to relate, came into the world under the favourable auspices of parent and virtue, parents who were not less solicitous to watch and cultivate the germinating genius on its first appearance, than they had been to succour and nourish the bodily growth and strength of their offspring while in infancy.

Sir Robert may, therefore, be supposed to have had all the advantages that birth could afford; his father, a man of consummate prudence and sound judgment; his mother, a lady of great discretion, and in the bloom of youth, and their station in life affluent and highly respectable.

Great care was taken by both parents in the education of their son; the father's instructions were given with an earnest *Hoc agit*,* as became him in that honourable capacity; and allowing for maternal feeling, the duties of the nursery were not less strictly performed; in that respect, we may speak of Sir Robert, as Cato did of the *Gracchii*,† that they were educated *non tam in genito, quam in sermone matris*;

We are informed that Sir Robert was placed at the school at Harrow, but the foundation and basis of his education are supposed to have no other architect than his fa-

ther, and a more able and more attentive one than he was could not have been found: and, perhaps, more equally anxious to commence the undertaking well, and so zealous for its success, for, in such a work, who can act exactly in *loco parentis*?‡ philanthropy never stretched human kindness to that length!

From school, Sir Robert was removed to Oxford, and became a gentleman commoner of Christ Church, which college, by the excellent management of Dr. Cyril Jackson, was eminently calculated to form and finish the gentleman as well as the scholar, and to fix those principles that sustain a firm veneration for our holy religion and the stability of the state. Under this discipline, Sir Robert was tutored and formed, as well as many other eminent characters, to fill and adorn the offices of public life. The mode of study, and the choice of books in this college, were judiciously adapted to the purposes intended. Upon taking his degrees, Sir Robert greatly distinguished himself, and gave an earnest of the abilities by which he has since become so conspicuous. It is rather remarkable that almost all the eminent men of the present day were noted for early display of talent while at the University.

Having passed through the college with so much credit and applause, it was natural enough to expect the honour that followed, on the first occasion that offered, on the death of Sir William Dolben, representative in Parliament for the University of Oxford, who had filled that honourable station nearly 40 years; the Speaker of the House of Commons had succeeded him, but being shortly after called up to the Upper House of Peers, by the title of Lord Colchester, Sir Robert Peel was chosen in his place; and he had not long been elected to this high trust, before he was appointed to an office of the first dignity and consequence, that of Secretary to the Lord Lieutenant of Ireland, a post which, in consequence of the distracted and agitated state of that country, required, and still requires, the utmost vigilance, foresight, and activity.

While Sir Robert remained in Ireland, he acquitted himself with impartiality and energy, but with every degree of leniency that was compatible with the preservation of government and the security of property, so far as it could be done without encouraging idleness; he relieved the peasantry, and endeavoured to ameliorate their condition; and when the failure of the crops, and the disorganized state of the country, had brought on disease and famine, he set to work his own active benevolence and all the means of his official influence to alleviate the general distress. On his return from Ireland, Sir Robert was rewarded by the applause of his Sovereign and his country, for the able and impartial performance of the duties that had been confided to him; and, on the retirement of Lord Sidmouth, he became Secretary of State, and it is well known with what propriety and diligence he has conducted the business of that exalted office; but which he since relinquished on account of a change in the Ministry, to the regret of even his political opponents.

While Sir Robert remained in office, he projected and carried into execution some of the most important improvements that had ever been suggested, particularly in the police department, both with respect to the magistracy, and the whole *pars comitatus*; instead of the former inefficient guardians of the public safety, he instituted a force of able-bodied men for the protection of the peace and property of the people; and so well was the plan arranged, that by day as well as by night, the streets and highways

* *Hoc agit*, a Latin aphorism, signifying, *Do thus*, emphatically and earnestly requiring attention to a particular thing.

† *Gracchii*, brothers and famous politicians -- *Vita H. Reg. of Rome*.

‡ Not more on the breast or on the lap, than by the conversation or speech of the mother.

are now preserved in perfect order; and depredations on persons and property are effectually prevented. The stipendiary magistrates were also put upon a better foundation; their salaries made adequate to their stations, and sufficient to engage the services of talented individuals: nor did he forget the miserable condition of those who, having offended against the laws of their country, were doomed to expiate their crimes in the gloomy dungeon of a prison and the labour of a mill; his benevolence beamed through these dark recesses, and demonstrated to those who had deviated, that reclamation was more the desire of his heart than retribution. In the exercise of patronage, *Sir Robert* always made wealth and merit the chief criterions in the choice of persons on whom to confer the favour of his influence.

Sir Robert's retirement from office was caused by the opposition in Parliament to the arrangement of the Civil List, in consequence of which the Premier, his Grace the Duke of Wellington, also resigned, and a new ministry was formed, under the auspices of Earl Grey, a nobleman of considerable talent and long political experience. *Sir Robert* has been attached to the Duke of Wellington, not only by political opinion and circumstances of state, but also by private family and friendship, having while in Ireland contracted a close intimacy with the *Wellesleys*, the Duke's relations in that country.

On the accession to office of the new ministers under Earl Grey, forming what is technically called a Whig Administration, the question of parliamentary reform became a subject of agitation, more energetic than it had ever before appeared to be among the people; and as the members of his Majesty's Government were mostly composed of gentlemen who had formerly advocated the right of the people to this restoration of their political privileges, they could not avoid taking up the subject as a ministerial measure, without exasperating the people by an apparent defection from principle; neither is it fair to suspect their sincerity on the subject, independent of their eagerness to possess themselves of power and emoluments: doubtless they felt the deep responsibility which they had incurred towards the country at large, by taking office, subject to previous declarations of reform, and the dangers of a change in the *representative system*, so large as that which (if they attempted any) must be accomplished.

Sir Robert Peel, with sentiments of great veneration for the constitution and welfare of the state, and the inviolability of its institutions, felt alarmed at the bold innovation which the scheme of the Ministers seemed to introduce, and therefore he opposed the progress of a measure, which he thought was begun in precipitancy, impelled by clamour, and likely to be conducted with danger, in the hands of imbecility, since it was possible that they might let slip the reins of government, and, like *Phæctor*, suffer the chariot of state to fall into destruction by setting fire to the combustibles that faction was ready to apply, and which had been actively introduced into the popular circles by incendiaries of no small ability and reckless determination. But no sooner was it become expedient, and indeed unavoidable, to carry the plan into action, than *Sir Robert*, with that promptitude which distinguishes a real patriot, determined to acquiesce with the decision of his country; and laying aside all party feelings, or sensations of disappointment, to throw all his influence and example into that scale which appeared best suited to favour the political welfare of the people, and the integrity of the empire.

The conduct of *Sir Robert Peel* in the present Reformed Parliament, we may venture to say, has met with unqualified approbation, from all ranks of people; and his disiu-

terested magnanimity with respect to the conduct of Ministers upon Irish affairs, particularly that Minister who fills the office that he (*Sir Robert Peel*) once held, may have a parallel, but never was exceeded by any statesman in any age or country.

In the "Guide to Knowledge" we do not profess to discuss questions of a political nature; it is our business to instruct, if we can, and give such lessons as may afford information to our readers, in the sciences of moral and social duties, and, for that purpose, we hold forth examples of biographical excellency, as worthy of praise and imitation; with this design, and for no other purpose, we direct our attention to the subject of this memoir still before our eyes, and on the theatre of public life, a life we are confident that never will be tarnished for want of private virtue, and which, standing on such a foundation, is not likely to be overthrown by any political flood or tempest. *Sir Robert* is now in the prime of life, on whom his country fixes a steady eye; he stands high in her opinion of his honesty as a statesman; and if a virtuous education and honourable susceptibility are sure guarantees of integrity and constancy, the country will not be deceived.

OF METEORS AND THE FLUIDS

THE word meteor signifies some body floating in the air above us; and meteors are compounded of vapours and exhalations. The former of these are aqueous particles, and the latter particles of various kinds of matter which are continually being carried off from the main stocks or bodies, and floated upward by the air.

The air itself is divided into three different regions, the upper stratum of the highest of which is calculated to be nearly fifty miles above the level of the earth. Of these three regions, or distinct strata of air, the highest is the lightest, coldest, and most subtle, and the lowest the heaviest, warmest, and most dense. This is easily conceivable when we remember that all the lower strata have to bear the weight and pressure, and are consequently condensed by all those above them. A column or pillar of air—for so any square portion of it may fairly be considered, one foot square is calculated—upon the supposition of the height which we have stated the atmosphere to be considered—to weigh no less than 2,160 pounds. A man of the ordinary average height and size is considered to present, in his entire person, about fourteen square feet of surface to the atmosphere. A bigger man of course presents a still more considerable surface; but a man who presents exactly the above surface to the atmosphere sustains an atmospheric pressure of no less than 30,210 pounds! A weight so enormous as this, if bearing upon a man in any one direction, would completely pulverize him: how he is enabled not only to move under it without pain or difficulty, but even without being conscious of its influence, we have elsewhere shown. This air, which is so subtle and so ponderous, which though invisible to our organs of sight is not only material but reducible, and frequently is reduced into its constituent gases, this air, when violently agitated, becomes what we call wind. Relative to the theory of the winds many errors have been committed, and much absurdity has been broached; yet the observation of some of the very commonest occurrences of life would, if a little attention were bestowed upon them, serve to render the true theory perfectly intelligible and convincing.

Our readers must of course remember that, when speaking of fluids, we explained, that a body specifically lighter than a fluid into which it is plunged will float in that fluid. We explained the law of natural philosophy by which this invariably occurs, so fully, that we need not now repeat it. Bearing the details of that law in their minds, let our readers now direct their attention to that simple and yet delightful object, their own fireside. Why is it that there is a constant upward draught of air from the room through the chimney? Surely, all of it at least which really ascends into the atmosphere, is in fact air heated, and, of course, very greatly rarefied. The visible particles of smoke are excreted minute particles of the consumed fuel, and though when diffused through the whole body of rising rarefied air they also rise with it, yet they very soon, in fact, return again separated from it, and visible or invisible, according as they are individually more or less minute. When a fire is first lighted, it heats and rarefies the air which is immediately above it. That air, in obedience to the law which we have already alluded to, of the rise of lighter bodies, becomes rarefied as it is heated, and rises as it becomes rarefied; and as quickly as it rises from the chimney in a rarefied state, its place is supplied by the colder, and thence denser, air from the apartment beneath. This air, in its turn rarefied, ascends, and is replaced by other air, and so in perpetual succession, as long as the fire is kept up; and thus there is a perpetual draught, as it is called, of air from the apartment up the chimney, on which account there are probably half-a-dozen rheumatisms and toothaches caught by the fire-side for one which is contracted out of doors.

The very same causes which produce the draught of air up the chimney, is the cause of those larger draughts which we call winds, and which fill the outspread sails of the seaman's vessel with a prosperous breeze, or rage in the tempest at sea, or in the all destroying hurricane on shore. The original cause of that wind motion of the air which we think of as wind is, that the air in certain portions of the atmosphere being more heated, on account of being at the time under the more immediate influence of the sun's rays, tends upwards, and is replaced by the dense air from around which rushes in; this in its turn is replaced by the denser neighbouring air, and thus perfect currents of air are established. The reason why the winds are not always tending upwards, and from no precise spot, is, that the rotatory motion of the earth beneath the sun is constantly presenting a new surface to be acted upon. This is easily rendered intelligible by observing that something of the former kind is actually perpetually occurring over the whole equatorial circle. This circle is perpetually presenting itself to the influence of the sun, and accordingly from this belt the rarefied air is constantly rising, and its place is being as constantly supplied by a rush of air or air from the north and south poles; which is the most complete explanation of the "trade winds." These winds, however, do not seem to proceed directly from the north and south. This is owing to the daily rotatory motion of the earth eastward; which gives the north wind the appearance of being north-easterly, and the south wind that of being south-easterly.

The extreme violence of these winds which we call tempests and hurricanes, is probably partly owing to some very simple chemical agency, which, however, is as yet unascertained, by which the rush of air thus produced is increased, counteracted, or disturbed. A very little degree of attention to the plain facts stated in our present essay will, however, it is hoped, afford all readers of common capacity a quite sufficient stock of data by which to

form a philosophical acquaintance with the theory of the winds.

The winds, like the globe itself, have four great divisions, and are named after those great divisions of the earth whence they proceed. The easterly wind traverses the arid and scantily-watered continent of Asia, and is therefore exceedingly dry; while the westerly wind which blows across the great Atlantic Ocean is usually charged with rains, which it collects in its course. The northerly wind arises in the Frozen Zone, and is consequently the coldest and most biting of the four; while the southerly wind, which rises in the Torrid Zone, and passes over countries scorched by the vertical influence of the sun, is, contrariwise, the warmest and most genial. Invalids find their feelings and their health greatly and sensibly affected by these different winds and by their various degrees.

COLOSSUS OF RHODES.—This gigantic statue was esteemed one of the seven wonders of the world; it was seventy cubits high, and a ship with all its sails might pass between its legs. It was thrown down by an earthquake about two hundred years before Christ; and when the Saracens became masters of this island, in 665, they broke it in pieces, and 900 camels were loaded with the brass. Rhodes also, was famous for its commerce, and its naval power. Its laws form the basis of the maritime regulations of modern Europe. The air of this island is good, and the soil fertile, but badly cultivated.

DAMIETTA.—This city, which is on the east of Rosetta, and contains 25,000 inhabitants, was very famous in the time of the Crusades. Its manufacture is fine linen of various colours; it is a place of great trade, and is 100 miles south of Cairo. From Damietta may be seen the spot, called the Field of Blood, where the conflict between the Christians and the Saracens is reported to have been so obstinate, that the earth and water were ensanguined for a considerable time after the battle; and where St. Louis, according to the Arabs, was taken prisoner.

Among the ancient Persians, when children arrived at five years of age, they were entrusted to the care of learned men, who carefully implanted in their opening minds an aversion to vice, and allured them, rather by example than by precept, to the practice of the moral virtues. They were all trained to military exercises, and particularly to the use of the bow; and none were allowed to enter the royal palace without express permission, nor to approach the seat of majesty without prostrating themselves on the ground.

Bujazet, after his capture, observing his conqueror to laugh at him, said, "Do not laugh at my misfortunes, Tamerlane; it is God that hath subdu'd me, not you. He is able to reverse our situations, and to undo to-morrow what he has decreed to-day." Tamerlane, assuming a more serious countenance, replied, "I did not laugh with any design of exulting over you, but from a sudden impression of the low estimation in which thrones and kingdoms must be held in heaven; since royalty has been bestowed on such a blink-eyed man as you are, and such a limping one as myself."

THE GUIDE TO KNOWLEDGE.

No. LIII.]

SATURDAY, MAY 4, 1833.

ONE
PENNY.



KIRKSTALL ABBEY, YORKSHIRE.

KIRKSTALL is a village situated on the river Aire, three miles from Leeds, in the West Riding of Yorkshire: the ruins of the Abbey occupy a considerable space, measuring from north to south three hundred and forty feet, and from east to west four hundred and forty-five feet. It is probable that the vicinity was of considerable importance even in remote antiquity, being the site of a considerable Roman station, as Roman coins have frequently been dug up at Cockbridge, a village two miles north of Kirkstall Abbey; and on an adjacent moor, traces of a Roman town have been discovered, consisting of fragments of urns and other pottery, with the ruins of a large stone aqueduct; and also the remains of a camp may be observed, measuring about five chains by four, with a single vallum.

The choir of Kirkstall Abbey extends fifteen yards by eight and a half, and has three chapels on each side: the transept is a square of nine yards and a half each way. The nave is forty-eight yards long, by eight and a half wide.

Kirkstall Abbey was founded in 1152 for Cistercians; they were first settled at Bernoldswick, near Gisburne, in Craven.

The revenues of the house at the dissolution of the monasteries were estimated at three hundred and twenty-nine pounds per annum—a very large sum in those days: the site of the Abbey was at that period granted to Archbishop Crammer and his heirs.

Among the monastic remains of the north of England, this ruin may justly claim an elevated rank: for, as a picturesque feature in landscape scenery, it is inferior only to Bolton Abbey, and as a specimen of architecture, it need hardly yield the palm of superiority to any other northern ancient edifice, the celebrated Fountain's Abbey only excepted.

Nearly the whole building yet remains, as only the lead and timber were removed at the dissolution. The whole exhibits that struggle between the Norman and early Gothic styles, which marks the buildings of the reign of Stephen. The windows are six round-headed lights; the doors are of the same form, adorned with rectangular or zigzag mouldings; the columns are massive, clustered, with pointed arches and Saxon capitals, each differing in design from the others; the cloister quadrangle and the apartments around it are nearly entire: the original refectory (there is a second

of later date) has been a magnificent vaulted room, supported on two cylindrical columns, each of a single stone.

At the original erection of this building, the tower, according to the practice in the twelfth century, was carried up only a little higher than the roof, but a lofty and imposing addition was made to it in the reign of Henry VII.: this so loaded the columns on which it was placed, not being calculated to bear so great a mass, that many years ago the north-west pillar gave way, occasioning the fall of two sides of the tower, which has perhaps contributed to enhance the picturesque effect of the whole structure: this part of the building is shown in the point of view selected by the artist in the sketch presented to our readers.

CELEBRATION OF HARVEST-HOME IN THE ISLAND OF RUGEN, SWEDISH POMERANIA.

In Vol. I. page 80, allusion has already been made to our English harvest-home; our readers will now observe the ceremonies of the same joyous period of the year as exhibited among some of our continental friends.

The harvest begins in Rugen about the middle of August. Rye is the first grain to be cut, which is done with the scythe; the sickle is not in common use. The honour of being first mower has given rise to a singular custom called "The Victory;" whence the proverb, "who comes first, mows first;"—(like our "first come, first served.")

When a field of corn is to be mowed, whoever is inclined to be the first goes very early to the field, takes a few strokes with the scythe, and then lays himself down and conceals himself until his fellow-labourers appear. But it often happens that a rival has been beforehand with him, and calls out that he need not trouble himself, as he had already gained "the victory."

Sometimes a thir expectedly starts up in another place as victor, and this kind of rivalry causes a great deal of mirth. Yet the mowers, to avoid all disputes, have bound themselves by certain regulations.

When the harvest is got in, the landlord generally gives his labourers a supper, and weddings are often celebrated at this season. In the afternoon the family, with their guests, are assembled round the table. The conversation relates to the weather, the harvest, the news, and similar topics.

On a sudden, the sound of violins and fifes is heard; a procession of men and women advance from the barn, preceded by their banner, which is a harvest crown composed of yew, box, gold tinsel, ribands, and gilt apples, all artfully arranged. While the landlord and his friends are coming out, those who form the procession seat themselves. When they are all settled and quiet, one of the young women presents the crown to the landlord with a poetical address.

Then the master and mistress dance a short minuet, give the crown to another couple, and so on. If a bridal pair are present, they dance first, with the crown. But the life of the feast is after supper. All kinds of character dances are then introduced, such as the Shoemaker's dance, the Weaver's dance, the Wink dance, and others.

But the most original is the Shepherd's dance, which consists of a pantomimical representation of sheep shearing. The movements are all very violent, the men whoop and holler, and the brandy-bottle passes briskly round. At midnight, the married and single form two parties, the former to protect the crown of the bride, the latter to force her from the dance. At last the married carry the day, and the crown (which the bride has lost in the fray) is replaced by a can; and then the young women's dance begins. Thus they continue until broad day-light.

OF THE USES OF SNOW.

It is not merely about the structure of the visible things around us that we are occasionally too incurious; we are but too apt to neglect to make inquiry into their uses. Snow is one of many things of the usefulness of which men are, in general, apt to make small or no account. Many of even those who do take the trouble to reflect on its effect upon the ground, form a very incorrect notion of it. Judging from its own nature and appearance, these persons infer that snow must necessarily be injurious to the earth, by reason of its dampness and intense cold. The very reverse of this is what actually takes place.

The thick covering of snow which lies upon the ground in winter, is so far from making the earth cold, that it, in truth, prevents it from being so. Were the dry earth exposed to the action of the bitter and piercing winds of winter, it would be utterly deprived of that genial warmth, without which the seed sown within it could not germinate. It is by the close and flaky covering of the shining snow, that a remnant of genial heat is preserved in the bosom of the earth. In vain do the piercing winds howl above; they cannot penetrate that mantle with which God has clothed the face of nature.

Some well-meaning, but mistaken writers, have essayed to prove, that snow has a chemical as well as a mechanical efficacy. They have imagined, and endeavoured to prove, that it not only preserves to the earth that portion of warmth which is absolutely necessary to the process of germination, but also fertilizes it. As a covering, protecting the earth from the sharp winds, snow is useful indeed; as a manure, it is utterly without virtue. It was not intended for a manure; and experiment has put it beyond doubt or question, that of the peculiar property which has been attributed to it, it does not possess one particle more than common rain-water.

The class of writers to whom we have alluded, have supposed that snow possesses a large proportion of nitrous salts. If it did possess these, it would undoubtedly tend to fertilize the earth: but it does not possess them. The aqueous particles were supposed to acquire these salts in the process of being frozen; but elaborate and well-conducted experiments have shown that although rain-water and snow contain a quantity of calcareous earth, and a very small quantity of nitrous and muriatic acids, the rain-water has, in fact, the larger portion of the two. And even the rain has them in such an exceedingly small proportion, that it cannot by any possibility derive any fertilizing virtue from them.

We need not go out of the way to exaggerate the usefulness of the creations of God. They have in reality such abundant, and in most cases such palpable, usefulness, that to admire them it is only necessary that we diligently and curiously observe them.

Observation of the appearances of nature leads us, almost insensibly, to moral reflection. How dreary is the uniformity and bleakness of the appearance of nature in winter! We cannot look abroad without feeling a sense of chilliness; and we could almost imagine that our own fireside has less than usual of its warm and cheerful influence. We repine at our temporary privation of the fruits and the pleasant scenery of summer; and even exclaim against the uncouth and rugged aspect of the winter. And yet, were it not for the preserving power of that snow, whose dazzling uniformity offends us so much, we should look in vain for the rich fruits and verdant lawns of the gay summer. The seeds and the tender plants would be utterly destroyed, and we should not only be without the beauty of summer, but also

without food. The golden harvest, which is so dear to us, would not wave in beautiful luxuriance, had not the dreary snow been wrapt as a mantle round the earth during the chill season of winter.

Even so is it with our moral nature. We are plunged into the midst of difficulties and dangers—we look abroad, and all is dreary, dark, and threatening. Short-sighted and of little faith, we are ready upon the moment to exclaim that we are deserted and must needs perish. Time flies on, our prospects brighten, and our difficulties and dangers vanish from before us. We look back with calm and undeluded minds upon the past, and discover that those very circumstances which most strongly excited our distrust and discontent, were the means of our preservation.

Due reflection in this way will never fail to afford us comfort and fortitude in the midst of all difficulties, however immense and seemingly unavoidable. We shall learn to consider our misfortunes and perplexities as a *moral winter*. We may look with some annoyance, indeed, upon the dreary and comfortless prospect around us; but we shall reflect that a brighter season will ere long shine upon us. We shall long, indeed, for the lovely spring-time, and the glorious summer; but we shall not the less feel the necessity of our enduring these wintry rigours so essential to perfecting the works of those more genial seasons.

We shall thus, even in our sorrows, and our sufferings, create a source of rejoicing; present privations will give us hope of future enjoyment, and the most imminent dangers will seem to be but a rugged pathway to security and peace. In a word, we shall learn to rely with pious constancy upon Him who can make all things work together for our good; and we shall find both profit and comfort in the habit which we shall insensibly acquire of believing and hoping that

“Whatever is, is right.”

VOLCANOES.

VOLCANIC phenomena are the most awfully striking manifestations of Divine power exhibited to man. To form a true idea of them, without witnessing their appearance, is impossible: to speculate on their origin, seems almost useless; while the different substances which they disgorge, seem to indicate such dissimilar causes, as wholly to baffle human curiosity.

M. Lemery, a French philosopher, was the first person who illustrated, by actual experiment, the cause of subterraneous fires and volcanic eruptions when arising from the development of heat by the mixture of mineral substances with fluids. He mixed twenty-five pounds of powdered sulphur with an equal weight of iron filings, kneaded the mixture into paste with some water, put it into an iron pot, and buried it a foot under ground. In about nine hours the earth rose, heated, and cracked; hot sulphureous vapours were emitted; a flame was perceived; the earth was covered with a yellow and black powder; and a subterranean fire, producing a miniature volcano, was spontaneously lighted up by the reciprocal chemical action of the substances intermixed.

Spontaneous ignition is not confined to mineral substances: vegetable matter, in a state of fermentation, evolves a degree of heat sufficient to cause combustion, as many an owner of burnt haystacks knows to his cost: but whether mineral or vegetable substances are concerned, moisture must be present, and that not in too great quantity; for in either case, complete dryness, or complete saturation with water, totally

hinders ignition. Iron and sulphur mixed together, and quite free from moisture, would remain for ages without taking fire. Supposing, therefore, that extensive beds of these very common minerals are reached by springs of water, gradually working their way until they burst into these depositories of ignitable matter, than the effects therfrom resulting, whether earthquakes or volcanoes, would be felt through the superincumbent strata until a passage, opened in the surface of the earth, either by land or by sea, would permit the confined gasses and accompanying ignited substances to expand their force and relieve the heaving soil from its inquiet tenants.

The explosions and eruptions of volcanoes therefore probably proceed from the access of a large quantity of water, whether derived from springs or from the sea: for most of the more remarkable volcanoes are near the ocean. Now let us compare the force of water under the effect of great heat, with that of gunpowder, one of the most powerful inventions of human ingenuity. The explosive effect of gunpowder is produced by the instantaneous liberation of the gases contained in its constituent parts: nitre, containing a large quantity of oxygen, and charcoal or hydrogen: these gasses are suddenly extricated, and at the same time greatly expanded by the fire which ignites the mass; the air thus volatilised is now subject to two operations: first, as much vaporous gas is liberated as fills a space, multiplied nearly two hundred and fifty times beyond the room occupied by the original substance when in a quiescent and solid state: secondly, these fluids, thus liberated, are expanded by the heat of the flame, so as to fill four times the space of the same gasses when at a low temperature; thus the force of fixed gunpowder, or the extent required for its liberated and heated constituent parts to expand themselves in, is about a thousand times greater than the solid unexploded substance.

Now water in vapour occupies full fourteen hundred times more space than in its usual aqueous form; so that steam occupies a larger comparative extent than the liberated and expanded gasses of ignited gunpowder: and the same degree of heat which rarifies air only two-thirds, rarifies water in the astonishing proportion of fourteen thousand times: its force and elasticity therefore must produce the most tremendous explosions when pent up: and the effects of its irresistible endeavours to overcome the opposition of its confining boundaries, will be in proportion to the depth of situation or extent of mass: so that when the effects of an earthquake are felt for thousands of miles in extent, it is very evident that cataracts of subterraneous water, rushing into immense caverns of minerals in a state of igneous fusion, must produce results far beyond the power of human calculation.

During the operation of casting some brass cannon, which took place in the presence of a great number of spectators who attended out of curiosity to observe so remarkable a process, the heat of the metal of the gun first cast, drove so much damp into the adjacent mould of the second, that as soon as the fused metal was let into it, it blew up with a force far exceeding that of gunpowder, with a noise like thunder; tore up the surrounding ground for some feet distance, destroyed the furnace, unroofed the building, and killed several persons on the spot, while the fused matter was scattered by the blast literally like dust before the wind: in fact, it was an earthquake in miniature.

The astonishing force of volcanic eruptions must therefore depend on the extent of the materials operated on by similar causes: if, therefore, we form an idea of several cubic miles of igniferous materials, suddenly invaded by a subterraneous estuary of the sea, the destruction of every-

thing on the superincumbent regions of the globe seems inevitable; and a continued eruption of the ignited materials must take place, until beds of the minerals, reached by this eruption of the fluid, are exhausted.

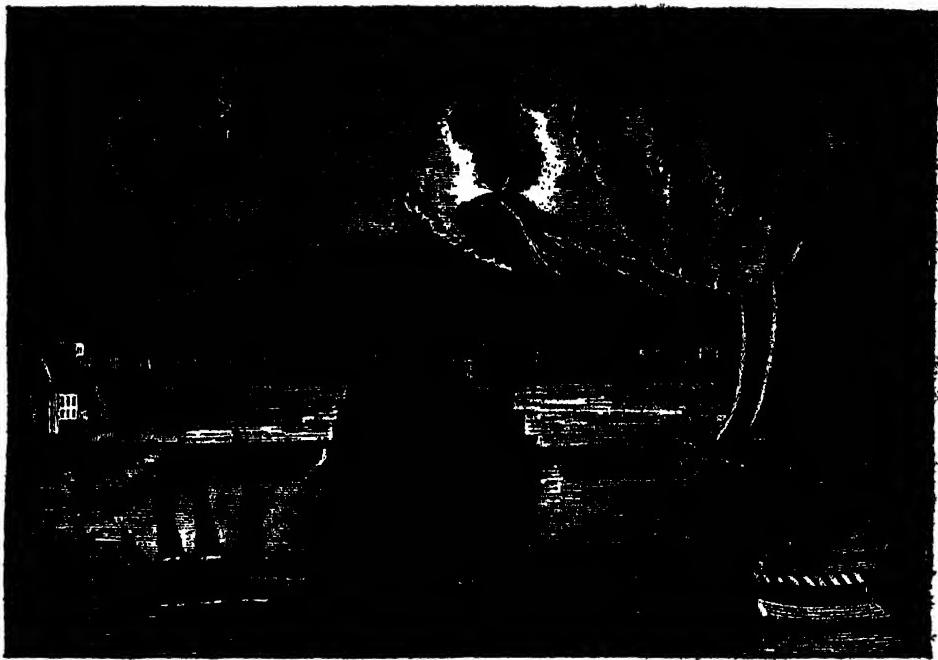
But the subject itself demands more space than one paper can furnish, and the immense number of extinct volcanoes merit a separate notice. Before, however, we conclude this part of the subject, we call our reader's attention to the fol-

lowing remarks:—That the STEAM-ENGINE which propels our ships, travels on our roads, spins our thread, weaves our cottons, and embroiders our muslin, derives its power from the same principle which devastates regions by earthquakes, or desolates cities by volcanoes.

These observations are principally intended to introduce the accompanying views of Vesuvius, one of the most remarkable volcanoes in existence.

DISTANT VIEW OF MOUNT VESUVIUS, AS SEEN BY NIGHT, IN THE YEAR 1751,

From a Picture painted on the spot, by Signor Tomaso Ruiz.



ACCOUNT OF THE ERUPTION OF VESUVIUS IN 1751.

THERE are various accounts of particular eruptions of this remarkable mountain, and we happen to have an opportunity of translating an account of the identical eruption here delineated. It is from a communication made by the Reverend Father D. J. Marca de la Torre to the Academy of Sciences, at Naples.

The Reverend Father relates that he visited the mountain on the nineteenth of October of that year (1751), without perceiving the smallest indication of an approaching eruption, and that in his ascent to the crater he rested himself on the very spot from whence, a few days afterwards, a torrent of lava was seen to issue. On Saturday, October 23rd, in the evening, some shocks of an earthquake were felt at Naples and its vicinity, accompanied by dreadful noises in the interior

of the mountain, which lasted several days. In the night of the following Monday, a fluid mass of ignited matter, like melted metal, issued about half a mile below the summit of Vesuvius, eastward, in the Atrio del Cavallo: one stream of this, descending the side of the mountain, inclining towards Torre del Greco, ran through a valley towards Le Mauro, a piece of ground covered with wood, and belonging to the Prince D'Ortajano.

On the following day, at noon, it had run four miles to the Valley, Fluscio; arriving at a part where the valley is above thirty yards wide, it ran fifty feet in five minutes; it was here but little above two feet in depth in front, of a thick consistence, covered with pumice-stones, flints, earth, sand, branches of trees, and other adventitious substances. The lava in running made a continual noise; a person might go before it without danger at the distance of a few fathoms.

VIEW OF A STREAM OF LAVA IN ITS COURSE,

From a Picture by Signor Tomaso Ruiz.

THE painting from which this subject was copied is a made was in one place about five hundred feet in breadth, companion to the "View of the Eruption;" the following and the matter cooled to the consistence of stone. is a translation of an inscription which the artist had written on the back of the picture:—

"On the 26th of October, 1751, a cleft was perceived about many shocks of an earthquake were felt in the below the summit of Vesuvius, and a stream of ignited parts adjacent to the mountain. On the 10th of November, matter gushing from it like a river of fire. On the following day the appearance was quite tremendous, the inflamed flame, accompanied with tremendous explosions; all the torrent forcing a channel which impetuously continued its wells around for a great distance were dried up, and the course among the fields, farms, and vineyards which lie Valley of Castagno was filled with volcanic matter to the between the mountain and the sea. The channel which it depth of twenty-seven feet."

ANECDOTES OF TWO RUSSIAN GENERALS.
THE UNNATURAL SON—THE NOBLE-MINDED BROTHER.

IN 1716, when Peter I. was at Copenhagen, planning with the King of Denmark a descent upon the Swedish province of Schonen, Lieutenant-General Bohn, the son of a clergyman at Bornholm, was in his suite. His father was dead, and left nothing save this son, of whom no one knew whether he was still alive, or where he lived.

At last, his mother heard that he was at Copenhagen, as a Russian general. Her joy at the news engaged her to undertake a voyage to that capital. On her arrival, she found out his lodgings, but the general was not at home. "I will call again to-morrow," said she, grieved, at the disappoint-

ment; "tell your master that I am his mother, and have come from Bornholm on purpose to embrace him."

The good old lady, by this, thought to attain her end; but, perhaps, it was the cause of the reverse. Had she surprised her son, Nature might have conquered; but the message could not operate very powerfully on a heart hardened by prosperity. Pride bore down every sentiment of feeling; and the general was highly indignant. "My mother has been dead many years!" he exclaimed; "it must be some beggar or mad woman, who has an interested design in her pretensions."

We may imagine with what delight the mother renewed her visit in the morning; but, instead of seeing her son, she received ten ducats from an adjutant, with an intimation not to molest the general again. She threw the money at his

fect: "I am not come," said she weeping, "to crave an alms, but to embrace my child; if he disowns and despises his mother, I will also reject him for ever."

This circumstance soon spread through the city, and at last reached the ears of the empress. Bohn could not have met with a more ardent heroine than Catherine, who always avowed her origin in the strongest terms of gratitude towards her benefactor.

She sent for the widow; and was soon convinced that she actually was the mother of the hard-hearted general. Bohn was then called in, severely reprimanded, and obliged to allow his mother an annuity of two hundred roubles during her life. He not only felt the momentary shame, but received the punishment due to his unfeeling behaviour, by being universally despised.

Among others, Catherine represented to Bohn the conduct of General Bauer, who was not ashamed of his origin; although his parents were in a still lower situation. The history is this:—

In 1712, when the Russian army occupied Holstein, under Menzikoff, General Bauer commanded the cavalry. No one knew anything of his origin; even his native country was almost a secret. He was then encamped near Husum. One day he invited to dinner all his brother-officers, and some other persons of distinction. When the party were assembled, he sent for a miller and his wife from the neighbourhood. Such an invitation from a commanding officer alarmed the worthy couple.

But Bauer did everything to inspire them with confidence. He wished them to dine with him; he wanted some information respecting the country. They were seated by him at table, and during dinner he asked the miller a number of questions concerning his family.

This had the desired effect, and loosed the miller's tongue. He related to his excellency, "that the mill had belonged to his father, that he inherited it as the eldest son. Two brothers were tradesmen; a sister was married to one of the same business; and God had blessed him with a family of four children." "So you were three brothers," said the general. "There were four of us," answered the miller (who did not wish to rank, perhaps, a soldier with tradesmen and millers); "the fourth enlisted as a soldier, but we have never heard of him, he must have been killed."

It is easy to conceive the effect this conversation produced on the other guests. But Bauer would not notice their astonishment till he could raise it still higher. "Gentlemen!" he exclaimed, "you were always anxious to know my origin. I was born here, and you have heard the history of my family."

He then embraced the miller and his wife as their long-lost brother. The next day he regaled them all in the mill where he was born, made valuable presents to his relations, and sent the miller's only son to Berlin, who afterwards had the honour of perpetuating the name of Bauer.

WHISTLING AND SINGING EMPLOYED AS SUBSTITUTES FOR CONVERSATION IN IMPRISONMENT.

THAT the French are a very ingenious and inventive people, is readily acknowledged; and in nothing is this quality more evident, than in those devices to which their military officers have had recourse, to amuse and circum-

vent those whom they intended to subdue. They cannot always be vindicated, in the judgment of strict honour and integrity: yet on some occasions, as on that now introduced, it would be moroseness, rather than morality, to impugn the alleviation of sufferings, by means of a skilful application of ingenuity.

We have no need to bring to recollection the imprisonment of several French General Officers, who were induced to seek their personal safety, by quitting the French army, then in insurrection, after the attack on the Tuilleries on the well-known tenth of August. These were arrested in their attempt to escape to Holland; and were first seized by the King of Prussia; from his custody they passed into that of Austria, and were long confined in the castle of Olmutz. It is to the honour of Madame de la Fayette, that she desired and obtained leave to share the captivity of her husband: but other wives were not so happy.

To maintain some intercourse with his family, M. de Pusy, one of the imprisoned party, concealed a tooth-pick, and mingling his saliva (not seldom his tears) with soot, he contrived to write in the blank pages of some pious works, which he hired from a bookseller in the town, such information as he desired should reach his wife.

It is true, that he was never without a guard in his room, but this guard having little taste for the pious meditations contained in the works procured by M. de Pusy, he slept, as too many others do when such things are in question. That the bookseller had weighty reasons for tolerating the destruction of his treatises on serious subjects need not to be doubted.

Moreover, it so happened, that although each of these prisoners was kept in solitary confinement, yet they were within hearing of each other, when standing at the windows of their respective chambers. To improve this advantage they thought themselves of the following method:—There is at Paris a number of tunes, called "Airs of the Pont Neuf," or those popular ballads that were sung at the corners of the streets, and in other public places.*

The words belonging to these airs, were so well known, that to strike up a few of the notes, was to recall the words which they accompanied. The captives at Olmutz gradually composed for themselves, a musical vocabulary, by whistling these notes at their windows, and this vocabulary after a while became so complete, and even rich, that two or three notes from each air formed their alphabet, and effected their intercourse.

They communicated to each other, by this means, news concerning their families, the progress of the war, and when by good fortune one of them procured a gazette, he whistled the contents of it to his partners in suffering. When any event particularly interested them, we may suppose, the chorus was proportionately loud and general.

The Commander of the fortress was constantly informed of these unaccountable concerto. He listened; he set spies; but the whole being a language of convention, the most practised musician would have failed, in detecting the intention and real expression of the notes he heard.

In vain was whistling forbid: was whistling ever made a crime? was it ever punished? At length the Austrian was tired out; and confined himself to conviction, that among the most difficult things in nature, was that of keeping Frenchmen from whistling and singing!

* The immense number of Scotch National Songs would probably enable the natives of Caledonia to hold a similar inarticulate conversational intercourse.

TO A SKULL,

Brought from the interior of America, attached to a War-pipe.

By MRS. HENRY ROLLS.

A wretched memorial of decay !
Grim record of the power of time !
Stern trophy of war's direful sway !
Thou yet can't tell the truth sublime,—
Death reigns sole conqueror everywhere !
From cultured nations didst thou come,
To war against a people rude ;
And wake with thundering trump and drum,
The echoes of that solitude
Which reign'd in primal forests there ?

Didst thou to savage chief belong,
Who, glowing with a patriot's fire,
Rush'd fiercely on the invading throng,
Fought—bled—and bow'd but to expire ;
Scorning the conqueror's boon to crave ?—
Nature's uncultured genuine child,
By art untaught, by power untamed,
He roved amid his native wild,
Nor other bounty sought or claimed,
Than a free life or early grave.

Did hostile tribe with tribe engage,
And, 'midst the battle's sanguine strife,
Revenge, dire demon's furious rage,
Strike him amidst that waste of life,
Which e'en from slaughter fiercer grows ?—
Or, his the captive's darker fate
Doom'd every torment keen to prove,
That shows how stern, how deep the hate,
Which springs from blighted mourning love,
As it in savage bosoms glows ?

Thou hast no tongue the tale to tell ;—
What hopes have revelled in thy brain ;
What it once sought, or did repel ;
What was thy owner's joy or pain ;
Where hailed the light, or closed his eyes ?
Yet, silent as thou art, and grim,
Thou hast a voice of awful power,—
Solemn as holy funeral hymn ;
It breathes in meditation's hour,—
"Like mine all earthly glory dies."

THE WATERY GRAVE.

By MRS. HENRY ROLLS.

O'er Ocean's scarcely heaving breast
Shines soft the silver Queen of Night ;
And every little wavelet's crest
Is tipt with pure reflected light :

The snowy gull appears to sleep,
Lulled by the ripple of the sea ;
And on the bosom of the deep
Your stately ship rests tranquilly.

No sounds of active life are there,
Yet manly voices murmur slow ;
As though the awful tone of prayer
Was broken by the thrill of woe.

Rises that sweetly soothing strain
From Ocean's deep-hid caverns dim ?
No,—breathed along the slumbering main,
Slow swells the solemn funeral hymn :

And slowly o'er the vessel's side
A form is lowered in Ocean's breast,
In circles spreads the broken tide ;
Then sinks again in moonlit rest.
That glowing youthful heart lies cold,
The dreams which fired his brain are o'er ;
The ship-boy's simple tale is told,
He died far from his native shore !

Yet in the lonely watch of night,
Some heart may on his memory dwell ;
And in the soft wind's murmuring flight
Still seem to catch his funeral knell :
Then as the ripple dashes slow,
And the moon sleeps upon the wave,
One tear of manly grief may flow
Whilst gliding o'er his watery grave.

SEPULCHRAL MONUMENT OF CAMDEN THE ANTIQUARY.

WILLIAM CAMDEN, one of the most eminent of our English antiquaries, was born May 2, 1551, in the Old Bailey, London. He received his first education in Christ's Hospital, which was founded by Edward VI. the year after Camden's birth. He was attacked by the plague in 1562, and was removed to Islington, where he recovered ; after which he completed his education at St. Paul's School, where his rapid progress and exemplary diligence in acquiring learning laid the foundation of his future literary fame.

At fifteen, in 1566, he went to Oxford University, and was entered as a servitor in Magdalen College ; afterwards he removed to Broadgate Hall, now Pembroke College, by the invitation of Dr. Thomas Thornton, Canon of Christ-Church, his tutor, and whose kind patronage and friendly assistance materially benefited the needy student. Dr. Thornton being promoted to a canonry in Christ-Church, Camden went to that College, living in the lodgings and at the expense of his benevolent supporter. The members of Broadgate Hall paid a singular mark of respect to his memory, by using, for many years, some short Latin graces composed by him.

Having been unsuccessful in his endeavours to obtain a fellowship or a bachelor's degree, he came up to London in 1571, where he continued his studies under Drs. Gabriel and Godfrey Goodman, who supplied him with money and books. On leaving the University he made the tour of great part of England, and in 1575 he obtained the place of second master of Westminster School. The small portion of leisure he could subtract from this important charge was devoted to his favourite study of antiquities. During every vacation he made excursions over the kingdom, and while at home investigated the manuscript collections of our own writers and foreign publications respecting this nation.

At this time he appears to have meditated seriously on producing his great work, the "Britannia;" and as his literary reputation engaged him in an extensive correspondence both at home and abroad, he was applied to by Oretius for information respecting this country. His solicit-



ations, the esteem in which Camden held him as the great restorer of geography, and the regard he had for his native country, prevailed on him to improve and arrange those collections which at first seemed designed only for his private satisfaction and curiosity.

He entered on the task under every difficulty and disadvantage; it was almost a new science, whereby he was to interest and inform an age unaccustomed to such researches. Geography had been first cultivated in Italy, for the purpose of facilitating the study of Roman history; and as the names of places there, and over the rest of the continent of Europe, where the Roman dominion had been long established, were not greatly altered, great facility was thereby given to determining the situations of ancient places: but in Britain, which they held so precariously, and for so much shorter a time, the case was widely different, and a far greater degree of uncertainty prevailed.

And this difficulty was much increased by the following circumstances:—Firstly, the Roman orthography and terminations had obscured, in numerous instances, the ancient British names: secondly, the Saxons, when they gained firm possession, made an almost total change in these as in every thing else; then, lastly, by means of the Norman conquest, the Saxon language ceased to be a living one in England, while the aboriginal language was preserved only in a corner of the island: and very soon after the conquest, there were few who could read the Saxon characters.

In tracing the Roman geography of Britain, Camden might derive great assistance from Ptolemy, Antoninus' Itinerary, and the Notitia; but, preparatory to his study of the Saxon geography of Britain, it was necessary for him to make himself master of a language which had ceased to be spoken here during several centuries. The few written remains of it were confined to the library of Archbishop Parker, now at Benet College, Cambridge; that of Land, now at Oxford; and that of Sir Robert Cotton, now in the British Museum.

We cannot go through the whole life of this eminent man, but have thus briefly stated the obstacles which seemed to forbid success: let our young readers, therefore, learn from the example and the results of his perseverance, never to despair of ultimate success when indefatigable determination is enjoyed. His early years appear to have been depressed by poverty, yet his good conduct obtained and secured the friendship of his patrons; and the honourable stations which his diligence procured, bear testimony to the closeness of his studies and the excellence of his character. We have merely hinted at the difficulties in the progress of his great work, which indolence would pronounce insurmountable, in order to encourage perseverance in its pursuit, after excellence, however great may seem the obstacles obstructing its progress.

After ten years' labour, Camden published his "Britannia," in 1586. In four years it passed through three editions in London, one at Frankfort, one in Germany; and a fourth appeared in London in 1594. He finished it at the age of thirty-five, and yet, as he informs us himself, he was able to devote only his spare hours and holidays, the duties of his office engrossing all the rest of his time.

In 1591 he quitted his situation at Westminster School, being appointed Clarenceux King at Arms. This place affording much greater leisure, he was enabled to devote more time to his favourite study; his journeys to different parts of England were all subservient to this end; and he published several other works of great labour and research.

He founded a history lecture at Oxford, sending down his deed of gift in 1622, endowing it with the Manor of Boxley, in Kent, then worth four hundred pounds per annum. Thus Camden fulfilled the vow with which he closes his "Britannia," namely, to dedicate some votive tablet to God and antiquity.

On August 18, 1623, as Camden was sitting thoughtfully in his chair, he suddenly lost the use of his hands and feet, and fell down on the floor, but soon recovered his strength, and got up again without receiving any hurt: but this occurrence was followed by a severe illness, which ended in his death on the ninth of the following month, at his house at Chiseldhurst, in the seventy-third year of his age: his body was removed to his home in London, was carried with great pomp to Westminster Abbey, and deposited in the south aisle, near the learned Casaubon, and opposite the father of English poetry, Chaucer.

The last and most complete translation of the "Britannia," by such an antiquary as Camden himself would have chosen, was published in three folio volumes, in 1789, by the learned and excellent Richard Gough, Esq.

* The reader will notice that there is an error in the inscription, on the monument as to his age at the time of his decease.

ESSEX.

THIS is a maritime county, lying north of the estuary of the Thames; its length from east to west is about sixty miles; its breadth from north to south about fifty miles; its circumference nearly one hundred and thirty miles. On the north side it is bounded by Suffolk and Cambridgeshire; on the west by Hertford and Middlesex; on the south by the river Thames, which divides it from Kent, and on the east by the German Ocean. It is situated in the Home Circuit; in the diocese of London, and the province of Canterbury: Chelmsford is the county town.

This county, previous to the landing of Julius Caesar, formed part of the territory of the *Trinobantes*. After the subjugation of Britain by the Romans, it was included in the province called *Flavia Cassariensis*, and was the seat of some of their most flourishing colonies. From the time of Antoninus, it appears that they had five principal stations in this county,—*Durolitum, Cassaremagnum, Canonium, Camelodunum, and Ad Ananam*.

On the Saxon Conquest, one division of the Heptarchy was denominated East *Saxa*, or the East Saxons, which included Essex, Middlesex, and part of Hertfordshire; this appellation became in time to be restricted to the county which now bears the name.

The land of this county is in general dry, and of a quality highly favourable to the labours of agriculture, and by means of its rivers, the facility of exporting its produce, and its vicinity to the metropolis, it enjoys advantages of no trivial importance.

The river Colne rises near Clare, in the county of Suffolk, and, passing by Colchester, to which it gives its name, falls into a creek between Merney Island and the main.

The Blackwater has its source near Saffron Walden, and flowing by Coggeshall and Witham, discharges itself into an arm of the sea below Maldon.

The Chelmer passes Chelmsford, to which it gives its name, and falls into the same estuary as the Blackwater.

The Crouch is a small river with extensive oyster-beds at its mouth: it flows into the main sea.

The Roddon joins its tributary stream to the Thames, near the town of Barking in this county.

The Cam rises at three springs near Newport, and passing Chesterford, takes a northerly course into Cambridgeshire.

The Lea and Stort form the western boundary of the county, dividing it from Middlesex and Hertfordshire.

The Stour separates it on the north from the county of Suffolk.

The estuaries and creeks are famous for their oysters, in which an immense trade is carried on with London, and a never-failing supply of fish is found on every part of the coast.

The climate is very mild, and generally healthy: but the islands at the mouth of the river, and the low lands along the coast, to a distance of eight to twelve miles from the sea and the Thames, are subject to the insalubrious effects of dense fogs; and although much has been effected by embanking, draining the marshes, and a highly-improved system of cultivation, yet the aguish character of the *hundreds* of Essex, particularly in the autumnal months, is not likely to be wholly obviated.

This is so completely an agricultural county, that little attention is paid to manufactures. Large quantities of baize and other woollen stuffs used to be sent from this county, but that branch of trade has mostly quitted it for the manufacturing districts of the west and north. Silk is, however,

still manufactured to a considerable amount, principally near Coggeshall.

There are a great number of beautiful and extensive views in this county; but their extent arises from the wide expanse of level country which the eye travels over, rather than from the height of the spot from which the view is taken. The Thames, of course, forms a prominent feature in almost every view, and the constant liveliness of the scene is greatly enhanced by the numerous vessels of every class, from the Dutch schuyt to the lofty East Indiaman, which are constantly arriving from every part of the globe, or departing from the greatest emporium of commerce in the world.

Southend is a fashionable watering-place not far from the mouth of the Thames, it is opposite to the mouth of the Medway, and the town of Sheerness; but during the time of low water, a vast extent of shingles and mud forms a foreground to the perspective which is anything but pleasing; but when the tide is in, the scene is lively and amusing in a great degree: the new town of Southend is situated on a high cliff, so as to have the advantage of a very extensive view.

East and West Tilbury are situated a short distance from the Thames, the banks of which are in this part extremely low and marshy. West Tilbury appears to have been the episcopal seat of Cedda, bishop of the East Saxons; he was among the first to plant and extend the doctrines of Christianity, and was the founder of many churches, especially in a city called by the Saxons *YTHANESTRE*, which it is supposed was situated at the mouth of the *Blackwater*, but the site of which has for many ages been completely overwhelmed by the encroachments of the sea. At that remote period *Tillburgh*, or Tilbury, was probably a town of some importance, but it has subsequently dwindled into an inconsiderable village.

In the parish of Tilbury, on the bank of the Thames, and exactly opposite to Gravesend, is *TILBURY FORT*, an old but regular fortification, which entirely commands the navigation of the river. So long ago as the time of Henry VIII, a kind of block-house was situated here, which was greatly enlarged and strengthened as it now appears, by Charles II., who was urged to this measure by the sailing of the Dutch fleet up the river, in 1667, when they burned the men-of-war at Chatham. At Tilbury, Queen Elizabeth had a camp in 1588. Here she assembled her army, and addressed to them the speech which appears in the following article.

POPULATION AND REPRESENTATION OF ESSEX.

The population of this county, by the census of 1831, was,

Males, 158,885. Females, 158,352. Total, 317,237.

Of which the following list shows a few particulars.

	Males.	Females.	Total.
Colchester, Borough, and Liberty	7,471 ..	8,696 ..	16,167
Becontree, Hundred..	16,609 ..	18,315 ..	34,924
Chelmsford, Hundred	13,900 ..	13,279 ..	27,179
Hinckford, Hundred	19,896 ..	20,287 ..	40,183
Lexden, Hundred....	10,852 ..	10,658 ..	21,510
Ongar, Hundred	7,572 ..	7,143 ..	14,715
Rochford, Hundred ..	6,990 ..	6,334 ..	13,334
Tendring, Hundred ..	11,479 ..	11,307 ..	22,786
Barstable, Hundred ..	7,019 ..	6,162 ..	13,181

The legislative representation of Essex, under the Reform Bill, is as follows, viz.

	Members.
Essex, North Division	2
— South Division	2
Colchester	2
Harwich	2
Maldon	2
Total	10

The former representation was eight members, the addition of 2 being for the county only. The boroughs remain unaltered.

QUEEN ELIZABETH'S SPEECH TO HER ARMY.

WHEN the Spanish Armada was in the English Channel in the year 1588, threatening an immediate landing on our shores, Queen Elizabeth established her camp at West Tilbury, where she assembled her forces, and addressed to her armed subjects the following right royal and patriotic speech, alluded to in the foregoing article:—

" My loving people,—We have been persuaded by some that are careful of our safety, to take heed how we commit ourselves to armed multitudes for fear of treachery; but I assure you I do not live to distrust my loving and faithful people.

" Let tyrants fear. I have always so behaved myself, that, under God, I have placed my chiefest strength and safeguard in the loyal hearts and good will of my subjects.

" And therefore I am come amongst you, as you see at this time, not for any recreation or disport, but being resolved in the midst and heat of the battle, to live or die amongst you all; to lay down, for my God, and for my kingdom and my people, my honour and my blood even in the dust.

" I know I have the body but of a weak and feeble woman; but I have the heart and the stomach of a King—and of a King of England too! and think foul scorn that Parma, or Spain, or any Prince of Europe, should dare to invade the borders of my realm; to which, rather than any dishonour shall grow by me, I myself will take up arms; I myself will be your general, judge, and recorder of every one of your virtues in the field. I know already for your forwardness you have deserved crowns; and we do assure you on the word of a Prince, they shall be duly paid you.

" In the meantime, my Lieutenant-General * shall be in my stead, than whom never prince commanded more noble or worthy subjects; not doubting but by your obedience to my General, by your concord in the camp, and your valour in the field, we shall shortly have a most famous victory over those enemies of my God, of my kingdom, and my people."

HALSTEAD SPIRE, ESSEX.

HALSTEAD is a large and populous town, seated on the slope of a gravelly eminence, at the foot of which the river Colne runs, and which is crossed by a bridge at the southern side of the town. It is forty miles distant from London, and has a weekly market on Fridays.

The name Halstead is Saxon, denoting a *healthy place*. A college was founded here in the reign of Edward III., for

a provost and eight priests, by Robert Bourchier, lord chancellor of England; this institution remained until the dissolution of the religious houses.

The church is an ancient edifice, and has its tower surmounted by a wooden spire, which is the *third* that has been raised upon it: the *first* was destroyed by lightning; the *second* was erected in 1717, at the expense of an apothecary of the name of Firk, on which occasion Prior wrote the following lines, which seem to have a prophetic character, as the spire they commemorate was destroyed by lightning; after which the present was built.

ON HALSTEAD SPIRE.

View not this SPIRE by measures given
To buildings raised by common hands;
That fabric rises high as heaven,
Whose basis on devotion stands.

While yet we draw this vital breath,
We can our Hope and Faith declare;
But Charity beyond our death
Will ever in our works appear.

Blest be he called among good men,
Who to his God this column raised;
Though LIGHTNING shake this Spire agaio,
The man who built it should be praised.

Yet Spires and Towers in duat shall lie,
The efforts weak of human pains;
And Faith and Hope themselves shall die,
While deathless Charity remains.

MAY.

THE name of this month is usually derived from Maia, the mother of Mercury, as sacrifices were offered to her on the first day of this month.

The Saxons called it "Tri-milki moneth," because in this month they began to milk their kine thrice in the day: and indeed the abundant juices of the young-springing grass contribute to render the milk more abundant and of a finer quality; the dairy therefore occupies great attention, and this is the season in which the greatest quantity of cheese is made.

SUN RISING AND SETTING EVERY TENTH DAY.

May 1...	Sun rises..	4h. 37m...	Sun sets..	7h. 23m.
— 11...	—	—	—	7h. 39m.
— 21...	—	—	—	7h. 54m.
— 31...	—	—	—	8h. 6m.

The sun enters the sign GEMINI, or the TWINS, on the 21st of this month.

This month is remarkable for the profusion of verdure which it exhibits: a May morning is frequently as beautiful as can possibly be imagined; a serene sky, a pure air, a refreshing fragrance, from the delightful verdure of the carpet which covers the face of the earth, the feathered tribe in full melody, and everything which can exhilarate the spirits, and attune the mind to gratitude and adoration.

The latest species of the summer birds of passage arrive about the beginning of this month; and the whole feathered tribe is full of activity, bustle, and solicitude, in providing for the welfare and sustenance of their offspring. The insects are adding to their numbers, and the earliest swarms of bees are leaving the parent hive.

* Robert Dudley, Earl of Leicester.

The insect youth are on the wing,
Eager to taste the honied spring,
And float amid the liquid noon;
Some lightly o'er the current skim,
Some show their gaily-gilded trim;
Quick glancing to the sun.

But it frequently occurs that in our northern clime this description of May is procrastinated until the name no longer answers to the description; and although a few days of beautiful weather may lead to the supposition that summer is really come, yet a relapse into the chill, and dreariness, and damp, and showers, and sleet of the wintry season, usurps the place of a clear blue sky and an enlivening sun.

But it would be unpardonable to dismiss May without noticing its initiatory May-day. In London little is known of this mark of the season beyond the Milk-maid's Garland, now rapidly falling into disuse, and the Chimney-sweeps' Holiday, accompanied by Jack-in-the-Green.

It is supposed that the Druids had many ceremonies appropriate to this day, from which the Beltein, a sort of rural sacrifice, is still retained in Scotland and the North of England.

Our Saxon forefathers also used to hold an anniversary on May-day; and the Column of May, whence some derive the May-pole, was set up as a signal for convening the nation to a congress, where the people, if they saw cause, deposed or punished their governors, barons, or kings.

Now, a most delightful series of occupations engages the mind and employs the attention of the serious in the British Metropolis, as a long train of Annual Meetings, for the purposes of benevolence, takes place in this month: the Societies for the distribution of the Sacred Scriptures, Missionary Societies, School Societies, and every class of institutions which can be devised to alleviate the moral wants of the human race. No nation but England can show such activity of good: and if the most atrocious depravity, and deepest misery, require the aid of correctives, certainly no nation more requires such redeeming efforts than England itself.

TO MAY.

Hail, lovely May! youth of the year!
Parent of blooming flowers!
Thy gayest tints again appear,
Thy gales, thy fostering showers!

The infant blossoms now expand,
Each opening grace is seen
As sown by Nature's genial hand,
They glad the spangled green.

Borne on thy purple wings, again
Spring's rosy hours advance,
Whilst gentle zephyrs join the train,
And woo thy fav'ring glance.

Thy dewy fingers still combine
Each gift for nature's throne,
And offer at her fostering shrine
The beauties of thine own,

A BIRTH-DAY TRIBUTE TO AN ABSENT BROTHER.

BY THE LATE MISS JANE TAYLOR, OF ONGAR.

DEAR Brother, while weaving your birth-day address,
I cannot but wish you were here;
For what the true feeling of love can express,
So well as a smile, and a tear?

The tear, should it fall on the track of my pen,
May wash its effusions away;
The smile—give me credit till Christmas, for then
I know I can promise to pay.

And why should I try in a song to enclose
What never in language was drest?
Away with the Muse, when the heart overflows,
For silence expresses it best.

A sister's affection, the hope and the fear
That flutter by turns in her heart;
When a brother sets out on his stormy career,
What magic of words can impart?

Then why any more of such rhyming as this,
At which all the critics might laugh?
Ah why, when a smile, and a tear, and a kiss,
Would tell it you better by half?

PRICES OF TEA IN CHINA, AND QUANTITIES IMPORTED.

The following curious statement of the prime cost prices and quantities of this article, which now seems to constitute one of the necessities of life for our English population, may probably possess the advantage of novelty to most of our readers.

Qualities or names of Teas.	Pounds imported.	Average price per lb. in Canton.
Bohea.....	3,778,012	0 7
Congou	20,142,783	0 11
Campoi	284,197	0 11
Souchong	601,739	1 2
Pekor.....	131,281	1 7
Twankay	4,101,845	0 11
Hyson skin.....	213,993	1 0
Hyson.....	1,014,923	1 10 $\frac{1}{2}$
Gunpowder ..	645	2 6
Total	30,269,418	

The sum total paid for this article is said to be as follows:—

Prime cost.....	1,386,951
Freight, 30,000 tons	300,000
Insurance, 3 per cent.	41,608
Commission, 2 $\frac{1}{2}$ per cent.....	34,673

Total cost in England..... £ 1,763,232

The sale of these teas by the Company, at the average price of 2s. 9d. in bond, that is, before the duty is paid, amounts to about 4,278,100
Cost as above..... 1,763,232

Leaving a profit to the East India Company of
about 2,514,868

The duties to Government, payable on teas, amount to a sum equal to what they sell at in bond : the cost of the teas must therefore be doubled in order to show what the expense is to the wholesale buyer. The Exchequer therefore receives a sum equal to the gross produce of the East India Company's total sale.

VOTES OF THANKS BY THE NATIVES OF HINDOSTAN FOR THE ABOLITION OF THE SUTTEE.

OUR readers need not be informed that the Suttee was a rite prevalent in the Indo-British territories, in which the living widow of a deceased person was consumed on the same funeral pile as her husband's corpse. This inhuman custom has been recently abolished by the British Government.

At a public meeting of NATIVES at Calcutta, the following resolutions were proposed and passed :—

"First. That an address be presented to the King, expressing the grateful sentiments of the liberal Hindoos of Calcutta.

"Second. That another address be sent to the Honourable the Court of Directors for defending the cause of humanity.

"Third. That an address be presented to Lord William Bentinck, congratulating his lordship on the confirmation of this humane regulation.

"Fourth. That an address be also sent to Rajah Rammohun Roy,* offering him a vote of thanks from the liberal portion of his countrymen, for his indefatigable zeal in the cause of humanity, and requesting him to present the two addresses, mentioned in the First and Second Resolutions, to the authorities in England."

This remarkable series of resolutions certainly exhibits an extraordinary advance in the public opinions of the native classes of our Eastern possessions.

PROGRESS AND PRESENT EXTENT OF THE MANUFACTURE OF COTTON IN ENGLAND.

The almost incredible increase of this peculiar branch of national industry naturally causes this question,—" What peculiar laws, or prohibitions, or bounties, or other legislative protections, has it received?" The remarkable reply is, "None." To what then does it owe its prodigious augmentation? To the principle of free emulation and exertion only.

The cotton manufacture was introduced into Great Britain in the commencement of the seventeenth century: but it did not make any noticeable progress until about the middle of the eighteenth century: then, the numerous mechanical inventions which followed in quick succession urged forward its advance with inconceivable rapidity.

The yearly import of raw cotton at the commencement of the eighteenth century hardly amounted to 1,200,000 lbs.: about 1760, the value of all the cotton goods manufactured did not amount to more than 200,000*l.* annually. In the year 1780, the import of raw cotton had arisen to about 5,200,000 lbs.: at the present time, the quantity imported

annually amounts to the astonishing mass of upwards of three hundred millions of pounds weight!

The exports of cotton goods and yarn, in 1831, amounted in declared or real value to upwards of SEVENTEEN MILLIONS OF POUNDS STERLING. The total value of cotton goods manufactured in Great Britain, notwithstanding the prodigious decline in the cost of the raw material and of production, is estimated at THIRTY-SIX MILLIONS OF POUNDS;—the capital employed at nearly SIXTY MILLIONS;—and the number of manufacturers, and their families supported by it, including artificers employed in the requisite machinery and buildings, is supposed to be nearly, if not quite, A MILLION AND A HALF.

FRAUD INGENIOUSLY DETECTED.

CHRISTOPHER ROSENKRANDS applied to the widow of Christian Seal for payment of a debt of five thousand dollars. The widow, conscious that her husband owed him nothing, refused; but Rosenkrands produced a bond, signed by her deceased husband and herself, which she declared to be a forgery.

A law-suit commenced, and judgment was given in favour of Rosenkrands; upon which the widow appealed to Christian IV., King of Denmark, solemnly assuring his majesty, that the bond in the possession of Rosenkrands had neither been written, nor signed, by her husband or by herself.

The king promised to investigate the matter with the closest attention, and ordered Rosenkrands to appear, whom he questioned and admonished, but without effect; Rosenkrands insolently pleaded his right to payment of the bond. The king then desired to see the instrument, which he viewed attentively, and told Rosenkrands it should be returned to him the next time he saw him.

Christian, in the mean time, continued to investigate the paper in question, and having minutely compared it, he at length found that the paper-maker, whose stamp was on the paper, had established his manufactory at Fredericksborg, at a period long subsequent to the date of the bond.

The paper-maker was called, who fully satisfied the king, that he had never manufactured paper of that description when the bond was dated. This was indisputable evidence against Rosenkrands.

Still the king said nothing, but soon after summoned Rosenkrands before him, and represented to him, that he ought to be compassionate to the widow, and consider that the wrath of Heaven would dreadfully visit him were he the cause of her sustaining so serious an injury. Rosenkrands continued inflexible, and even murmured; when the king granted him a few days to reconsider the business, but in vain. Rosenkrands was then apprehended, the fraud completely exposed, and the delinquent punished with exemplary severity.

REMARKABLE COPY OF THE KORAN.

The following is an account of a transcript of this celebrated Mohammedan book, which is probably without a parallel, at least as to size, in the annals of letters. It is a copy of the Koran, executed by a devoted follower of the Prophet, named Gholam Mohgoodeen, and his two sons, who lately passed through Moradabad, in their way from Peshawar to Mecca, with their ponderous, and, no doubt, to them, precious charge.

* This highly-talented individual is at present in England.

The letters in which it is written are about three inches long, and the Book itself is a foot thick, and four feet eight inches long by two feet eight inches broad. The text, which was written entirely by the father, occupied him six years : it is interlined with a Persian translation by one of the sons : the binding is, literally speaking, "in boards."

The book is carried on the back of a camel, under canopy of crimson cloth ; when they halt, it is taken off and set on a sort of frame ; the padlock which secures the wooden covers is then unlocked, and the leaves are opened for the inspection of the curious or the devout, until the hour of departure arrives, when it is replaced on the back of the camel, and proceeds towards its destination.

EXTRAORDINARY ANTHROPOPHILIES.

WHAT jarring chord of the human fabric is struck ? and how is it struck ?—to produce effects both involuntary, irresistible, and unaccountable, similar to the following remarkable sensations ?

HENRY III. of France could not stay in a room where there was a CAT, although he was so unmercifully fond of dogs that he was seen to go about with a basket of young puppies suspended from his neck by a black string. The DUC D'EPERNON fainted at the sight of a LIZARD. Marshal D'Albert could not endure the presence of a WILD BOAR, nor even that of a SUCKING PIG. Vladislaus, King of Poland, was distracted at the sight of APPLES. Beaumanoir could not smell FISH without being greatly agitated. Bonliger trembled at the sight of WATER-CRANES. Tycho Brahe felt his limbs sink under him when he met either a HARE or a FOX. Bacon swooned at an ECLIPSE of the MOON. Boyle fell into convulsions on hearing the sound of WATER drawn from a cask. James I. of England could not endure the sight of a DAGGER-SWORD ; and Sir Kenelm Digby narrates that the King shook so vehemently at knighting him, that he would have run the point of his sword into the eye of the knight-elect, if the Duke of Buckingham had not guided it across his shoulder. M. La Motte de Vayer could not endure MUSIC, but delighted in the sound of THUNDER. An Englishman of the seventeenth century was nearly expiring whenever the 53rd of January was read to him. A Spaniard about the same period fell into a syncope whenever he heard the word LANA (wool) mentioned, although his coat was made of that material.

SIR THOMAS GRESHAM.—WITH A PORTRAIT.

WHEN individuals arise whose talents seem to alter the accustomed course of public business, their conduct proves them to have possessed that insight into the principles of the affairs they were engaged in, and to exhibit their talents in a most prominent point of view, as outstripping the age in which they lived.

The subject of this brief sketch was one of these ; for whereas, before his time, the Sovereigns of England were compelled to have recourse to foreign money-lenders, Sir Thomas Gresham was the first who counselled his Sovereign to apply at home, and by his influence prevailed on the joined interest to assist the Sovereign in pecuniary matters, thereby keeping at home the exorbitant interest which, before that period, had been sacrificed for the advantage of aliens.

Sir Thomas was descended of an ancient and most respectable family, which took its name from a town so called in Norfolk ; he was the youngest son of Sir Richard

Gresham, Knight, Alderman, Sheriff, and Lord Mayor of London, an opulent merchant, and a man of great public spirit. Thomas was born in 1519, in London, and bound apprentice to a mercer when young ; but that he might acquire an education suitable to his future prospects, he was sent to Caius College, then Gonvil Hall, Cambridge. He remained there some time, and made such great proficiency in his studies, that Caius, the founder of the College, styles him *doctissimum mercator*, "the most learned merchant."

Nevertheless, his love for learning did not distract his attention from mercantile concerns, while the large estates acquired by traffic in his own family did not a little contribute to decide his choice. His father was agent for Edward VI. in the business of raising money in Antwerp, and in procrastinating the payment of sums already borrowed : his son succeeded him in this branch of his concerns.

This was, in most instances, a most galling office, and he was repeatedly greatly vexed by the irregularity with which engagements made by him were frequently disappointed : and his royal master was compelled to purchase of the dealers jewels and other valuable commodities at an exorbitant rate, as a premium to induce them to forego the claim for the due payment of their demands. Some idea of the disadvantageous nature of these transactions may be formed from the fact, that the current rate of interest was then sixteen per cent. per annum.

The activity of his business may be inferred from this, that in a very short period of the reign of Edward VI. he made forty voyages from London to Antwerp, and he succeeded at length, by rigidly enforcing punctuality, to raise the character of the English government in pecuniary transactions so as to command any sums of money the exigencies of the state might require.

He filled the same post under Mary, and also under Elizabeth, who employed him on all occasions : also to provide arms for her troops, conferring on him the order of knighthood, and appointing him her agent in foreign parts. He lost an only son at the age of sixteen.

Having observed the convenience and utility of the covered exchange at Antwerp, and contrasting it with the great annoyance of bad weather to which the London merchants were exposed, they meeting for the transaction of business in Lombard-street and the courts adjacent, he offered to build a covered edifice, at his own charge, provided the City of London would furnish the site : this noble offer was gladly accepted, and it was completed with great promptitude, as it was opened in 1569 ; and on January 29, 1570, Queen Elizabeth, attended by her court, visited the building, and caused it to be proclaimed by a herald, with sound of trumpet, "The Royal Exchange," a name which it has ever since retained.

Having been engaged in raising money at Antwerp for the Queen, and perceiving the great loss accruing from paying such exorbitant interest abroad, he advised applying to our own merchants ; but, when first started, his plan was rejected by the merchants, and was negative at a Common Hall. However, through Sir Thomas's influence, several of the merchants subscribed sums to the amount of sixteen thousand pounds, at an interest of six per cent. per half-year ; and when the first six months were expired, she renewed the same loan for a similar period, at the same rate of interest, with brokerage or premium.

To show her great regard for his character, Queen Elizabeth appointed him, together with the Archbishop of Canterbury, the Bishop of London, and other persons of eminence, assistants to the Lord Mayor for the government of the city of London during her progress through the country.



In 1578, the Queen visited him at his seat at Osterley, when Sir Thomas entertained her majesty magnificently. On this occasion, having stated her opinion that the court before the house would look better if divided by a wall, Sir Thomas, in the night, sent for workmen from London; who so speedily, and so silently performed their task, that before morning the wall was finished, to the great surprise of the Queen, who observed that it was no wonder that he who had been so quick in "building a change," should be able so quickly to "change a building." This seat became the property of the family of Child, and passed by marriage into the family of the Earl of Jersey.

He expired suddenly in the year 1609, at his house in Bishopsgate-street, and was buried with private magnificence in his own parish church of St. Helen's. He was followed by one hundred poor men, and as many poor women, all of whom were to receive black dresses from his estate. The charges of his funeral amounted to eight hundred pounds.

He left a large portion of his property for the purpose of founding seven lectureships, in divinity, law, physic, astronomy, geometry, music, and rhetoric, at 50/- per annum, each, to be delivered at his house in Bishopsgate-street. These lectures are still continued in a room in the Royal Exchange; but the attendance at them is very limited.

After the decease of his widow, the Corporation of London and of the Mercer's Company obtained a patent from the crown to hold his estates for the uses directed by his will, without which patent they would not have been able to retain them on account of the statute of mortmain.

He was so constantly intrusted with the mercantile affairs of the Queen, that he received the name of "THE ROYAL MERCHANT," and his house was sometimes appointed for

the reception of foreign princesses upon their first arrival in London. And as no one could be more ready to perform any generous action, which might contribute to the honour of his country, so he very well knew how to make the best use of them for the most laudable purposes.

And although he was frequently consulted by the Queen and her Ministry on important occasions, yet the most shining part of his character appears to have been his public benefactions. For it was not only by his liberality and public spirit in erecting the Royal Exchange, and in doing so much for the advancement of learning, that his generous feeling was shown; but his charities to the poor, the almshouses built and endowed by him, and his ample contributions to the ten prisons and hospitals in London and Southwark, must be mentioned to his immortal honour.

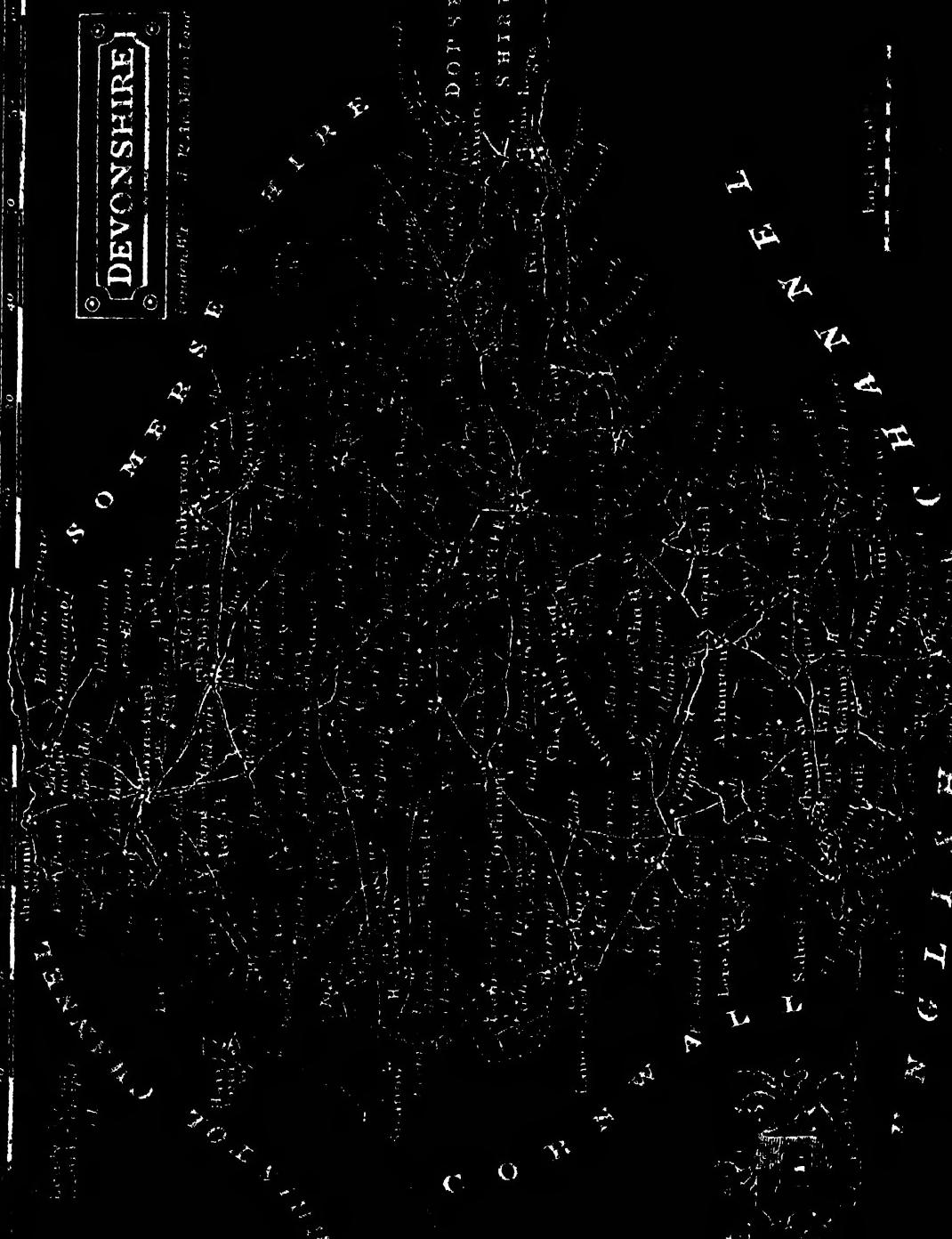
So long as integrity, punctuality, liberality, public spirit, and benevolence, shall be regarded as praiseworthy qualifications in a British merchant, so long will the admiration of a grateful country rest on the character of Sir Thomas Gresham.

TO SUBSCRIBERS.

Several of our younger friends having expressed a wish that we would present them with subjects in drawing, by they might exercise their creative talents, in this request they are informed, that the next Number contain a very spirited and well-executed "HEAD AND SHOULDERS," which will be found to be admirably adapted to furnish an interesting subject for the portfolio.

Those Subscribers, therefore, who wish to possess so desirable an embellishment, will, in order to prevent disappointment, give their names, with the day and number of the GUIDE, with the word "HEAD."

DEVONSHIRE



DEVONSHIRE.

DEVON is a maritime county, and is bounded on the east by Somersetshire, on the west by Cornwall, on the west and north-west by the Bristol Channel, and on the south and south-east by the English Channel. In length it extends about seventy miles, in breadth nearly as much, and is upwards of two hundred and eighty miles in circumference.

It contains upwards of 1,650,000 acres, or about 2580 square miles, and is divided into thirty-three Hundreds; it contains one City, Exeter; thirty-seven market Towns; 449 Parishes, 117 Vicarages, and upwards of seventeen hundred Villages.

This County is in the Western Circuit; in the diocese of Exeter, and the province of Canterbury: Exeter is the principal place in the County, and is one of those few cities which have the advantage of ranking as a County by itself, thereby enjoying many extensive municipal privileges, which it has possessed from time immemorial.

In the reign of King John, the city paid a fine of one hundred and ten marks for a renewal of its charter. The government of the Corporation is vested in a Mayor, a Recorder, and Common Council, seven of whom are Aldermen and Justices of the Peace. Civil causes are tried by the Mayor or his officers, but criminal causes or breaches of the peace are determined by the Aldermen, who are Justices. Exeter has sent members to Parliament from the earliest period of parliamentary history.

The climate of this county is remarkably mild, more particularly in the southern part, where vegetation suffers very little interruption even during the winter season. Myrtles of all sorts constantly flourish in the open air, and sometimes form part of the garden hedges. Figs ripen to perfection, and both fruit and culinary vegetables can nowhere be surpassed for general excellence.

The growth of Apples, in particular, is a circumstance of much importance, as the pressing of Cider has been a great branch of trade during upwards of two centuries. Large quantities are made for exportation, and much is sent to London. It is, however, a very uncertain crop: immensely productive some years, at others hardly paying for the trouble of gathering. The Devonshire breed of Cattle is remarkable for its value and beauty.

The principal Manufactures of Devonshire consist of Hats, Woolen Cloths, Serges, Gloves, Porcelain and Earthenware, Iron, Cordage, Silk, Yarn, Laces, and Fishing-nets.

The Rivers of Devonshire abound with Fish, and great quantities are taken for the London market. The Tavy and Tamar produce considerable revenues from their Salmon; the Otter is famous for its Trout, Salmon, and Peel: and at Starcross, Topsham, and Lymstone, there are extremely productive Oyster Beds. The Herring fishery was formerly carried on to a great extent, but is now nearly lost, as the Herrings no longer visit the coasts of Devon, except in very inconsiderable numbers; Pilchards, however, still frequent the southern coasts of Devon, Dorset, and Cornwall.

The Mineralogical riches of Devonshire are varied, extensive, and valuable; they consist of Coal, Copper, Tin, Iron, Lead, Limestone, Ochre, Umbré, Granite, Pipe-clay, Pottery-clay, and a variety of Marbles, are also found in several places, not inferior to the Italian marbles either in quality, hardness, susceptibility of polish, or beauty.

A great number of Rivers water this County, and contribute largely to its prosperity, either as being themselves

navigable or furnishing the means of supplying the canals which intersect it. The principal are, the *Ewe*, the *Torridge*, the *Tamar*, the *Aven*, the *Erme*, the *Taw*, the *Dart*, the *Tavy*, the *Yealme*, the *Lynn*, the *Sid*, the *Plym*, the *Otter*, and the *Axe*; and a great number of smaller streams.

There are several watering-places of great fashionable resort in this county, as Teignmouth, Sidmouth, Ilfracombe, and others: the salubrity and mildness of the climate conduce greatly to the estimation in which they are held.

Such are the mildness and salubrity of the climate, that medical men are accustomed to recommend a residence here to consumptive patients, particularly during the winter months; and many constitutions, weakened by long residence in hot climates, have experienced great advantages from the genial atmosphere of Devon and Cornwall.

To give even a brief account of the different Towns of this extensive county would demand a volume of some extent; but we cannot entirely pass over the great naval station of Plymouth, which is one of the largest maritime towns in England, and a place of considerable antiquity: until the reign of Henry II. it was principally inhabited by fishermen, but the vast increase of the British Navy, both national and commercial, and the convenience of its extensive harbour, have raised it into great consequence.

It is situated at the mouth of the river Plym, at a small distance from its junction with the ocean: its trade is extensive, chiefly depending on shipping: pilchards form a considerable article of commerce. It has two harbours for merchant-vessels, Catwater and Sutton Pool; and for King's ships, Hamoaze Bay, which is about four miles in length, and about half a mile broad: this is where vessels of war of all sizes are laid up in ordinary.*

PLYMOUTH CITADEL, which lies on the south side of the town, was erected by Charles II., on the site of a quadrangular castle, built in 1396, at the expense and under the direction of Edmund Staffords, then bishop of Exeter. The ramparts of the Citadel are mounted with 165 cannon of large calibre: these ramparts afford a delightful series of views, and in fine weather the inhabitants avail themselves of the advantage of a cheerful promenade.

Close by PLYMOUTH is the town of STONEHOUSE, which connects PLYMOUTH with another town which formerly was called PLYMOUTH DOCK, but which has had its name changed into DEVONPORT. On the margin of Stonehouse Creek stands the Royal Naval Hospital: in this building twelve hundred patients can be received at the same time.

In the reign of William III., a wet and a dry dock were constructed near Plymouth other docks have since been added, with various other requisite buildings, and every convenience for building and repairing ships: storehouses, houses for the officers and artificers of every description, and extensive barracks: these and the number of private houses built near them, constitute a town which was usually called DOCK, or PLYMOUTH DOCK, but importance suggested the propriety of bestowing a more appropriate name, and in 1824, with the sanction of the King in Council, it received the name of DEVONPORT, by which it is at present designated.

There are many subjects of great interest which want of space hinders us from inserting at present: as, for instance, the Plymouth Breakwater, the Eddystone Lighthouse, the Diving Bell, &c. &c.

* For an explanation of this term see the succeeding article.

POPULATION AND REPRESENTATION OF DEVONSHIRE.

The total population of Devonshire, by the returns of 1831, amounts to

Males.	Females.	Total.
235,630 ..	258,538 ..	494,168

Of which numbers the following places exhibit the largest proportion, viz.:—

	Males.	Females.	Total.
Brampton, Hundred	10,313 ..	11,661 ..	21,974
East Budleigh, Hundred	9,257 ..	11,009 ..	20,266
Coleridge, Hundred	9,618 ..	10,721 ..	20,339
Crediton, Hundred	5,823 ..	6,414 ..	12,327
Ermington, Hundred	5,293 ..	5,231 ..	10,524
Exminster, Hundred	8,500 ..	9,672 ..	18,232
Hayridge, Hundred	6,755 ..	6,689 ..	13,444
Haytor, Hundred	11,166 ..	12,077 ..	24,143
Lifton, Hundred	6,908 ..	6,539 ..	13,447
South Molton, Hundred ..	6,779 ..	7,046 ..	13,825
Roborough, Hundred	5,433 ..	5,463 ..	10,896
Shebbear, Hundred	9,670 ..	10,489 ..	20,159
Stanborough, Hundred	7,154 ..	7,367 ..	14,521
Tawton with Winckley ..	6,499 ..	5,923 ..	13,422
Teinbridge, Hundred	7,169 ..	7,296 ..	14,465
Tiverton, Hundred	4,950 ..	5,569 ..	10,519
Wonford, Hundred	13,206 ..	14,213 ..	27,419
City of Exeter, and County of the same	12,524 ..	15,408 ..	27,932
Plymouth, and Suburbs ..	33,043 ..	42,491 ..	75,534

The following is the present state of the Representation of Devon, under the Reform Bill:—

	Members.
Devon, North	2
— South	2
Exeter, City	2
Barnstaple, Borough	2
Tiverton, do.	2
Ashburton, do.	1
Dartmouth, do.	1
Devonport, do.	2
Plymouth, do.	2
Totness, do.	2
Haniton, do.	2
Tavistock, do.	2
	—
Total.....	22

By the Reform Bill, Ashburton and Dartmouth lost one Representative each: Beeralston, Okehampton, and Plympton, were entirely disfranchised.

EXPLANATION OF THE NAUTICAL EXPRESSION
“ LAID UP IN ORDINARY.”

As this expression conveys no idea explanatory of its meaning, and as it is one of frequent occurrence in subjects relative to maritime affairs, we offer the following remarks:

In times of peace, the Royal Navy of England is divided into two classes, namely, the ships “in commission,” and the ships “in ordinary.” Ships “in commission” are those which have their complement of officers and men, and are employed on the various duties of naval affairs, either abroad or on the home station;

But as the total of vessels of war “in commission” required during a time of hostilities, very far exceeds the number required for a period of peace, it is evident that a large number must be either sold off, or kept until public events require that they should be got ready for active service. At the termination of every war, therefore, the entire navy undergoes inspection, whereby it is decided what ships shall be dismissed the service and sold off, and what shall be retained for future exigencies.

When the ship sold off is a British-built man-of-war, the purchaser is compelled to enter into a bond, with a heavy penalty, to insure that the vessel shall be broken up, or taken to pieces; this is under the idea that if re-sold, it might come into the possession of a foreign power, and that thereby the measurements and model of the ship might be copied by some naval power, to the advancement of foreign naval science, and, consequently, to the comparative detriment of our own. If the vessel is foreign-built, then no such bond is required, as the same reason does not apply.

But when all the vessels which present some defect, as, for instance, being bad sailers, or are old, seriously damaged, are infested by the dry rot, or for all other similar causes, there will remain a great number which it is advisable to keep until wanted: to retain them “in commission” would incur a ruinous and needless expenditure; they are therefore laid up “in ordinary” at the different naval stations, where the extent of space, and security from damage, permit them to remain in safety.

Hamoaze, mentioned in the preceding article, is one which furnishes admirable facilities for ships “in ordinary,” and here a considerable portion of the English navy is laid up. Ships laid up “in ordinary,” are stripped of all their rigging, except their lower masts, the guns and stores of every description are taken ashore, and everything is taken out of them; the officers and men are paid off, and the crew is either turned over to other ships, or dismissed: the vessel is then put under the care of the Boatswain, Gunner, Carpenter, and Cook; these always remain to take care of the ship, and a very small number of seamen to assist them.

In Hamoaze, the ships are moored by large iron chains or cables laid across the bottom of the harbour (secured with anchors of a peculiar form, made on purpose), to which the hawser, or mooring-cable of the ship “in ordinary,” is attached, so that the ships ride easily with the tide, without the possibility of damage, and without wearing out their own anchors and cables. In Hamoaze there are ninety-two of these chain mooring-cables.

Ships thus kept “in ordinary” are fitted out, when required, with great promptitude, as the spars, masts, yards, sails, cables, cordage, and every requisite, are all marked in the storehouses with the name of the ship to which they belong, and only require to be replaced to render the vessel ready for sea; they want neither making nor fitting, and thus have only to be put into the places whence they had been removed when the ship was put out of “commission,” and laid up “in ordinary.”

The seaman is accustomed to use these expressions in a metaphorical sense: when the landsman says, “out of employment,” the sailor says, “out of commission;” and when the tradesman talks of having “retired from business,” the tar calls it being “laid up in ordinary.” In the same mode of professional parlance, Jack calls confinement in his bed by severe illness, being “dry-docked, and undergoing a thorough repair;” and the amputation of a limb, he gaily terms “having a spar carried away.”

THE ANCIENT BRITONS.

In the Introductory Chapter of the *History of England*, which the reader has already perused (see vol. I., p. 40), a very brief account of the ANCIENT BRITONS, i.e. aborigines of England, is inserted.

But as a memoir so short as that is, could not, from its brevity, contain a sufficient mass of information to satisfy the curiosity of an intelligent mind, we shall now return to the subject, and introduce a few remarks bearing on the peculiarities of this remarkable people.

For let us remember that there still exist among us the descendants of those very warriors who so thoroughly castigated the Roman invaders, and left them so little to boast of in the results of their earliest attacks on this country, that the conquerors of the ancient world permitted the Britons to remain in unmeasured independence nearly a century, before they again summoned sufficient resolution to attempt the reduction of this island.

And under whatever pressure of invasion or form of government the British Nations have suffered or existed since that period, nevertheless an ANCIENT BRITON IS AN ANCIENT BRITON STILL; and could one of those Druids who perished by the Roman sword, or one of those Bards who suffered under the bloodstained policy of the "ruthless king," —could either of them "burst the ceremonies of the marble tomb," and revisit the recesses of the CYMRY, his language would be understood by the peasantry of those districts; yes, he would be able to converse with those who cannot understand the tongue in which the laws they live under are enacted and enforced, nor comprehend the language in which the sermons they sit under are preached.

Is there on the entire surface of the globe another region where the same people and the same language have uninterruptedly existed during the lapse of twenty ages? and that according to the accredited records of history only, without adding any supposition or estimate as to the more remote period of ages bygone long before historical narrative commences; and many ages must have elapsed before so complete a state of political organization as they possessed could have been attained.

To obtain correct ideas of the state and manners of the Britons before the landing of Cesar is by no means easy; and the description which that General gives of the inhabitants of this island is extremely limited and defective.

Those who visited Britain as merchants were more attentive to the acquisition of gain than to obtaining of knowledge; it is likely that they did not penetrate far into the island, nor explore the coast to any great extent. They traded with such parts as were their immediate neighbours; but their inquiries were solely mercantile.

A few Druidical devotees, no doubt, visited this island which they esteemed HOLY; but the secrecy of their order divulged nothing to gratify the inquisitive. Travellers for curiosity, in ancient ages, directed their steps rather eastward than westward, nor did they think of gathering information from among those whom they esteemed uncivilized barbarians, for the benefit of the descendants of those savages, who, in future times, might attain degrees of civilization much beyond their own.

A visit to Britain was attended with no advantage, much hazard, and more trouble; and the Roman General who first explored rather than conquered this separated country, could procure no other information concerning it than what the reports of sailors and traffickers afforded.

But we are not, therefore, to suppose that the Britons had little communication with Gaul; it is certain that they had

sent to the Continent a considerable force to assist in opposing the progress of the Roman arms, and had supported their brethren fighting against Cesar as much as circumstances permitted them.

But this must be restricted principally to those tribes which inhabited the coast opposite to Gaul; for this island was peopled by several races of inhabitants, and we have no reason to believe that those of the interior would take much interest in the concerns of any beside their immediate neighbours.

The southern parts of the island were cultivated; but the general character of the Britons was that of a pastoral people; their flocks and herds were their riches, and these they drove, according to the seasons, from one feeding station to another.

The agriculturist is fixed to a place, for a time at least, by the necessity of waiting for the result of his labours. Whoever has sown cannot depart until he has reaped; and where he has gathered the most abundant harvest, he at length establishes his residence. But the herdsman, deriving all from the tillied ground, without labour, may change the scene of his attention, and quit, for the attractions of unconsumed pasture or of novelty, the accommodations of his late abode.

The chief support of the Britons was derived from their kine, their sheep, and their swine. They abstained from fish altogether: they held it unlawful to eat hares, hens, or geese, yet they did not scruple the breeding of them, by way of amusement. The cattle of a whole tribe were usually kept together; and an appointed number of persons were detached to attend them. This party sometimes amounted to several hundred men, and the herd not seldomly consisted of twenty thousand head of cattle.

There can be no doubt but that milk was a principal part of the food of the Britons; yet there is every reason to believe that they also consumed considerable quantities of animal food. The effect and nature of the climate of their island may be taken as a proof of this.

They were fond of horses, and skilled in the art of training them; and their horses must have been of a good breed, docile, yet high-mettled as proved by their conduct in battle. Dogs also, no doubt, they trained, as necessary for the purposes of hunters, herdsmen, and shepherds. As their exhilarating beverage was mead, they must have kept many bees; and the productions of these laborious insects supplied their masters with more than one enjoyment.

Trade they had no other than what consisted in the exchange of the raw productions of their country, for manufactured articles. Skins, of course, they had many to dispose of: metals, tin, lead, iron, some native silver, and some gold: but whether they parted with the latter metals, or wrought them into ornaments themselves, may be doubted. It is certain that they were fond of personal ornaments; beads of amber, of glass, as well as of gold, have been found in their sepulchres; these were probably procured by exchange.

But as it is not possible to complete this subject in the space which one number can afford, we must defer to our next publication the following interesting subjects:—

1. The division of the Ancient Britons into States, Tribes, and Families.
2. The importance of their Pedigrees.
3. The advanced state of their Political Organization at the period when Julius Cesar was repulsed in his attempt to invade this island.

STANZAS,
BY MISS ANN TAYLOR, OF ONGAR.

"THE WIND PASSETH OVER IT, AND IT IS GONE."

I saw a dew-drop, cool and clear,
Dance on a myrtle spray :
Fair colours decked the lucid tear,
Like those which gleam and disappear
When showers and sunbeams play :—
Sol cast athwart a glance severe,
And scorched the pearl away.
High on a slender, polished stem,
A fragrant lily grew :
On the pure petals many a gem
Glittered, a native diadem
Of healthly morning dew :—
A blast of lingering winter came,
And snapped the stem in two.
Fairer than morning's early tear,
Or lily's snowy bloom,
Shines Beauty in its vernal year :
Bright, sparkling, fascinating, clear,
Gay, thoughtless of its doom !
Death breathes a sudden poison near,
And sweeps it to the tomb !

REMARKABLE APPEARANCE OF PHANTASMS
OCCASIONED BY PERSONAL INDISPOSITION.

The subject of SPECTRAL APPEARANCES is of a nature far too mysterious, extensive, and complicated, to be stated and settled off-hand. In innumerable instances the nervous irritability of the spectator has suggested erroneous ideas of spectra supposed to be presented to the organs of sense.

Some curious persons, of uncommon strength of mind, and sufficiently well-informed, have watched the progress of a diseased imagination in themselves, and have been able to distinguish its effects, so as not to be deluded by appearances, however strong and well-defined.

Among the most extraordinary and decisive of these is the case of Nicolai, the celebrated author and bookseller of Berlin. He was accustomed to lose blood twice a year; but this was omitted at the close of one year, when it ought to have taken place. He thus narrates his sensations :—

" I had, in January and February of that year, the additional misfortune to experience several extremely unpleasant circumstances, which were followed, on the 24th of February, by a most violent altercation.

" My wife and another person came into my apartment in the morning in order to console me, but I was too much agitated by a series of incidents which had most powerfully affected my moral feeling, to be capable of attending to them.

" On a sudden I perceived, at about the distance of ten paces, a form like that of a deceased person, with whom during his lifetime I had been acquainted. I pointed at it, asking my wife if she did not see it. It was but natural that she should not see anything, my question therefore alarmed her very much, and she sent immediately for a physician; the phantasm continued about eight minutes.

" I grew at length more calm, and being extremely exhausted, fell into a restless sleep which lasted about half an hour; the physician ascribed the apparition to violent mental emotion, and hoped that there would be no return, but the violent agitation of my mind had in some way disordered

my nerves, and produced farther consequences which deserve a more minute description.

" At four in the afternoon, the form which I had seen in the morning reappeared. I was by myself when this happened, and being rather uneasy at the incident, went to my wife's apartment, but thereto likewise I was accompanied by the apparition, which, however, at intervals disappeared, and always presented itself in a standing posture: about six o'clock there appeared also several walking figures, which had no connexion with the first. As, when the first terror was over, I beheld the phantasms with great emotion, taking them for what they really were, namely, remarkable consequences of my indisposition, I endeavoured to collect myself as much as possible, that I might preserve a clear consciousness of the changes which should take place within myself.

" I observed these phantasms very closely, and frequently reflected on my antecedent thoughts to discover exactly, if possible, by means of what association of ideas these forms presented themselves to my imagination.

" I thought at times I had found a clue, but, taking the whole together, I could not make out any natural connexion between the occupations of my mind, my personal occupations, my regular thoughts, and the multifarious forms which now appeared to me, and now again disappeared.

" After repeated and close observation, and calm examination, I was unable to form any conclusion relative to the origin and continuation of the different phantasms which presented themselves to me. All that I could infer was, that while my nervous system was in such an irregular state, such phantasms would appear to me as if I actually saw and heard them; that these illusions were not modified by any known laws of reason, imagination, or the common association of ideas, and that probably other people who may have had similar apparitions which they regarded as supernatural appearances, were exactly in the same predicament.

" I attempted to produce at pleasure phantasms of persons whom I knew, by intensely reflecting on their countenance and shape; but distinctly as I called on my lively imagination the respective features of three of these persons, I still laboured in vain to make them appear to me as phantasms, though I had before involuntarily seen them in that manner, and perceived them some time after, when I least thought of them.

" I could at the same time distinguish between phantasms and real objects, and the calmness with which I examined them, enabled me to avoid the commission of the smallest mistake. I knew exactly when it only appeared to me that the door was opening, and a phantasm entering the room, and when it actually opened, and a real person entered.

" These phantasms appeared equally clear and distinct at all times and all circumstances, both when I was by myself and when I was in company, and as well in the day as at night, and in my own house as well as abroad; they were, however, less frequent when I was in the house of a friend, and rarely appeared to me in the street; when I shut my eyes these phantasms would sometimes disappear entirely, though there were instances when I beheld them with my eyes closed, yet when they disappeared on such occasions, they generally reappeared when I opened my eyes.

" I generally saw human forms of both sexes, but they usually appeared not to take the smallest notice of each other, moving as in a market-place, where all are eager to press through the crowd; at times, however, they seemed to be transacting business with each other: I also saw several times people on horseback, dogs, and birds.

" All these phantasms appeared to me in their natural size, and as distinct as if alive, exhibiting different shades

of carnation in the uncovered parts as well as in different colours and fashions in their dresses, although the colours seemed somewhat paler than in real nature; none of the figures appeared particularly terrible, comical, or disgusting, most of them being of an indifferent shape, and some living a pleasing appearance.

" I also began to hear them talk, the phantoms sometimes conversed among themselves, but more frequently addressed their discourse to me; their speeches were commonly short, and never of an unpleasant turn.

" At different times there appeared to me both dear and sensible friends of both sexes, whose addresses tended to appease my grief, which had not yet wholly subsided: these consolatory speeches were in general addressed to me when I was alone, sometimes I was accosted by these consoling friends when I was in company, frequently while real persons were speaking to me. These consolatory addresses consisted sometimes of abrupt phrases, and at others they were regularly connected.

" These phantoms continued until April 20th, at eleven o'clock in the morning: when, after losing blood, I perceived that they began to move more slowly. Soon after, their colour began to fade, and at seven o'clock, they were entirely white. But they moved very little, though the forms were as distinct as before: growing, however, by degrees more obscure; yet not fewer in number as had generally been the case.

" The phantoms did not withdraw, nor did they vanish; which previous to that time had frequently happened. They now seemed to dissolve in the air; while fragments of them continued visible for a considerable time. About eight o'clock the room was entirely cleared of my phantom visitors."

What an astonishing enigma is Man! Does his physical system furnish a few superfluous ounces of blood?—do a few throbs of the pulse too rapidly repeated, thus disorganize his intellectual faculties and dethrone his reason? Will a fevered heat calcine to ashes the most elevated intellect, or reduce to futility the most cultivated mind? What is Man whose breath is in his nostrils?

If the previous life of an individual suffering under a delusion similar to that above described had been stained by heinous crimes, would not these spectral appearances have assumed the reproaching guise of his murdered victims, or the vindictive menace of tormenting fiends? Would they have renewed the agonized gaze of a murdered friend? the dying smile of a murdered infant? the forbidding look of a murdered parent?

" But," says the sunny spring-time of youth, " these remarks are not for me, I have never perpetrated, never can perpetrate, such atrocities." May the watchful care of Eternal Mercy enable thee thus to speak on thy death-bed! but remember, the most bold-hardened murderer that ever renounced the feelings of humanity, was once a smiling babe, nestling in its mother's bosom.

But art thou quite guiltless? Do not thy numerous murdered hours complain of their murderer?

See the Guide, Vol. I. page 131.

THE TERRIER.—WITH AN ENGRAVING.

(*See the Guide, Vol. I. page 131.*)

DOGS of this breed are determined enemies of all species of vermin, foxes, weasels, rats, badgers, &c., and will attack them on all occasions; and as this dog will follow them into their subterraneous retreats, or *earths* (as they are called by sportsmen), to drive them out, he has derived his name from the Latin word which signifies *earth*. It is a fierce, bold,

and hardy dog, and will attack even the badger without hesitation, although by no means a match for that powerful animal singly; yet some very strong, well-trained dogs, have been known to overcome even a badger.

Some TERRIERS are smooth-haired; others are rough or wiry-haired; they are short-legged, not famous for speed, strongly bristled about the muzzle: it is generally attendant on packs of fox-hounds, in order to assist in unearthing the fox.

The TERRIER is a teachable scholar in all sorts of tricks, either mischievous or amusing: the blind mendicant finds it a powerful auxiliary; by his canine attendant he is led safely from place to place, guided by the string which passes from his hand to the dog's neck; and as if the animal knew the wants, wishes, and designs, of his master, and entered into a full feeling as to the means of their mutual support, he will endeavour to excite the attention of passers-by, sitting upright, and holding in his mouth with unweariable assiduity, a box, or some such contrivance, and bringing the donations of the charitable to his master with unimpeachable integrity.

THE RUSSIAN TERRIER;

OR, CANINE ATTACHMENT AND REMEMBRANCE.

SOME years ago, the captain of a Russian vessel lying in Dublin harbour, used to frequent the Roscius Tavern, in Fownes-street, accompanied by a dog of the terrier kind, which he had brought over with him.

Being unexpectedly compelled to sail, the dog was left behind; and having diligently explored all the Quays, even to the Pigeon-house, he returned to the Roscius, where he met Mr. Cornellys, the veteran comic actor, who received him with much humanity, and supplied his wants.

Although very infirm, and nearly blind from age, and we perhaps may add, grief, the creature still made occasional visits to the quays, the docks, and Ringsend, and was a well-known passenger in the ferry-boats that used to ply at the latter place before the erection of the wooden bridges.

The boatmen, being acquainted with his story, admitted him free; and it was truly affecting to behold his eager inquiries (as we may almost admit the term) after his beloved master!

In this affectionate search he carefully examined all those places where it is supposed his master had occasionally stopped; and it is no less remarkable than true, that he appeared to distinguish the foreign vessels—always going on board and minutely inspecting them, particularly those from the Baltic, from Russia, Norway, Denmark, or Sweden, while he uniformly passed by our own, or those from Britain.

The gratitude of the canine species is so frequently recorded, that we should not mention this amiable trait, as conspicuous in our present subject, did we not think that it deserves particular notice:—

Sensible of the obligation he owed Mr. Cornellys, he never met him but what he offered his paw for a friendly shake, and if it was not accepted, would neither eat nor drink, fearful that his benefactor might be displeased with him.

When he went to the Roscius, and did not see Mr. Cornellys, he used to proceed to the Shakespeare in Cope-street, where he would await his coming; and at both those houses he used to be a frequent visitor. He was allowed by the best judges to be of a most valuable breed, and to have been a remarkably fine dog in the early part of his life.

The poor fellow at length died without ever having the satisfaction of finding his lost and deeply-regretted master.



A TERRIER.

TO SUBSCRIBERS.

The following Number will contain an Account of YORKSHIRE: but as the immense extent of that great County, if compressed into a single Map, would reduce the dimensions of its various parts and divisions to so minute a scale as to render it useless, the Proprietors have determined to present Two Maps instead of ONE. The Monthly Supplement will also be published with it, and Part XI. will be ready for delivery at the same time. The TITLE, INDEX, &c. for Vol. I. are now on Sale. Price 1*s*.

THE GUIDE TO KNOWLEDGE.

No. [VI.]

SATURDAY, MAY 25, 1833.

PRICE
ONE PENNY



VIEW OF MICKLEGATE BAR, YORK

The Gates of the City of York will be mentioned in the description of that City. MICKLEGATE BAR, of which the above is a view, is the most magnificent; it is adorned with lofty turrets, and finely embattled: over the Roman arch hangs a large shield, bearing the Arms of England and France, painted and gilt, and on each side one of a less size decorated with the Arms of the City of York.

YORKSHIRE.

GENERAL TOPOGRAPHICAL DESCRIPTION.

This is by far the most extensive County in England, and also one of the most interesting and important, whether considered in regard to its mercantile opulence, its extensive manufactures, its immense population, or its political importance. In form it is an irregular oblong rectangle, including more than three millions of acres, and upwards of six thousand square miles.

It is bounded on the North by Durham and Westmoreland, on the East by the German Ocean, on the West by Westmorland and Lancashire, and on the South by Cheshire, Derbyshire, Nottinghamshire, and Lincolnshire; its extent, in length, from East to West, is one hundred and

thirty miles; its breadth, North to South, is ninety miles, and its circumference is about four hundred and sixty miles.

It is divided into three Ridings, which for most purposes are regarded as so many distinct counties; they are named the West Riding, the North Riding, and the East Riding. *Riding* is derived from the Saxon word *Trithing*, a dividing into three.

The West Riding is bounded on the East by the Ainstey and the River Ouse; on the North by the North Riding; on the West by Lancashire; and on the South by Cheshire, Derbyshire, and Nottinghamshire.

The North Riding is bounded by the County of Durham on the North; the German Ocean on the North-east; the Ainstey of York and the West Riding on the South, and the County of Westmoreland on the West.

The East Riding is the smallest of the three. It is bounded on the North and West by the rivers Harford and Derwent, which divide it from the North Riding as far as Stamford Bridge; on the West and South-west it is divided from the West Riding by the river Ouse; on the South it is bounded by the river Humber, and on the East by the German Ocean.

As each of these divisions is larger than many entire Counties, we must, in a similar manner, divide our remarks into three portions, giving one to each of the Ridings.

BRIEF HISTORICAL ACCOUNT OF YORKSHIRE.

THE name of this County is derived from its principal City, which, according to Camden, was named by the Britons CAER-ETTROC,* by the Saxons Ebor wic, by Nennius, CAER EBROUC; all these appellations are derived from the founder, King Ebraucus: hence is derived the Latin name EBORACUM.

In the Roman mode of dividing this island, it was included in the portion called MAXIMA CÆSARIENSIS, and was originally inhabited by the Brigantes.

Under the Saxons, this County formed part of the Saxon Kingdom of the Northumbers, and so continued until the entire Heptarchy was united under Egbert.

This province suffered severely under the incursions of the Danes. After the Conquest, in 1066, William I. divided it among some of the great Norman Barons, whose duty it was to repel the invasions of the Scots; they held their lands on this tenure; to which duty also they were sworn. This county long continued its opposition to the Normans, and its repeated endeavours to break the yoke of the invaders were crushed and punished with sanguinary severity.

Yorkshire continued to make a considerable figure during the disastrous Civil Wars which desolated the entire country under the Standards of the White Rose of York, and Red Rose of Lancaster, in which contests the best blood of England was shed in catacata.

One of the most important events which influenced the commencement of the contest of Charles I. and the Parliament, was the closing of the gates of Hull against the King, and the firm adhesion of this place to the Parliament; the importance of this event may be estimated from this remark, that the principal magazines of arms and munitions of war then being the Tower of London, Portsmouth, and Hull, which were therefore the three keys of the kingdom; as the King had secured the first two, the adhesion of Hull to the cause of the Parliament was, perhaps, the weight which turned the scale in its favour.

The Royalists made various unsuccessful attempts to gain the place by negotiation, and finally besieged it in form, under William Cavendish, then Marquis of Newcastle; but Fairfax defended it with so much skill and bravery, that after five weeks' severe contest they were compelled to raise the siege.

The last political event was an unsuccessful attempt to retain the City in favour of James II., at the period of the Revolution in 1688.

YORK.

PRINCIPAL CITIES AND TOWNS OF YORKSHIRE.

THIS subject is so multifarious and extensive that a mere list of the names would occupy a space larger than the plan of this work would allow. We must, therefore, confine our attention to a few of the most remarkable.

YORK.—This City, as it now stands, is nearly three miles in circuit; it is two hundred miles from the metropolis. It is divided into four districts or wards, which take their name from the four gates or bars of the City, namely, Micklegate-Bar, Bootham Bar, Monk-Bar, and Walmgate-Bar.

The City has been much improved of late years; the streets have been widened by taking down a number of old houses, which, according to the ancient style of building,

projected story over story, so as almost to meet at the roofs: the streets have been paved and new drains made.

The erection of the Lockgates upon the Ouse, mentioned in the account of the Rivers of Yorkshire, has been a great advantage, by keeping a depth of water, instead of unwholesome mud, which formerly polluted the air when the river was low.

YORK CASTLE and the **COUNTY HALL** are grand and conspicuous buildings, situated near the confluence of the Ouse and the Foss: the area within the Castle walls is 1100 feet in circumference.

YORK CATHEDRAL.—The dimensions of this magnificent Cathedral are as follows:—

	Feet.
Length, East to West	534
Breadth, East End	105
Breadth, West End	109
Length of the Cross Aisles, North to South	222
Height of the two Western Towers	196
Height of the Nave	99
Height of the Lantern Tower or Steeple	235

The two uniform Western Towers, diminishing as they ascend in ten several compartments, all cloistered for imagery, display a richness and grandeur rarely equalled: they are each surmounted by eight pinnacles.

The interior is every way answerable to the magnificence of the exterior: in the lowest tier of lights, one window of exquisite beauty is divided into five, separated by stone mullions concealed from the eye, with clusters of elegant shafts attached at intervals, and supporting arches richly ornamented with a kind of chevron work, a relic of the Saxon style.

A volume would hardly do justice to this noble pile, and even the most elaborate description, or highly-finished representations, would very inadequately supply ocular inspection, which alone can do this edifice justice.

It may not be amiss to observe that the Cathedral is so surrounded by houses, that it is difficult, or rather impossible, to find a station whence a full and distinct view of it can be taken. It suffered severely by an incendiary some time past, but all the damage has been repaired.

The ruined **Abbey** of St. MARY merits great attention, it is just without Bootham-Bar, on an area three quarters of a mile in circuit. The Abbot was neutral, and had a seat in Parliament; his revenue was little inferior to that of the Archbishop; and when the Barons of Yorkshire were summoned to do military service, he sent a deputy to bear the standard of St. Mary in the royal army.

The **CHAPTER-HOUSE** is a fine specimen of Gothic architecture: it is an octagon of sixty-three feet diameter; the height, sixty-eight feet, unsupported by any pillar, and entirely kept in a present state by one key-stone, geometrically placed in the centre: the outside, however, is strongly supported by eight buttresses.

The **ARCHBISHOP'S PALACE** is a very handsome edifice on the banks of the Ouse, three miles South-east of the City.

It is impossible to do more than mention the numerous public buildings of this important City: we must, therefore, be content with merely enumerating the **MANSION-HOUSE**; the **GUILDHALL**; the **COUNTY-HALL**; the **NEW CITY JAIL**; the **HOUSE OF CORRECTION**; the **HOSPITALS**; **DISEASE-HOUSES**; **ASYLUM**; **CHARITABLE SOCIETIES**; **CHARITY-SCHOOLS**; **CHAPPLES**; **MARKETS**; **THEATRES**, &c. &c.

LEEDS, situated on the North bank of the Aire, is one of the most commercial and opulent towns in Yorkshire: it is

* The words *Caer*, *Ifie*, *Caer*, and *Chester*, signify Castle.

generally well built, mostly of brick. The middle and western quarters display fine streets, and several elegant buildings. The length, East to West, is about a mile and a half; the breadth, North to South, not much more than half a mile. Besides five Churches, it has ten Dissenting Meeting-houses, and a Catholic Chapel.

This town is celebrated for its immense manufacture of woollen cloths, in which it is equalled by none in the United Kingdom.

WAKEFIELD, about eight miles South of Leeds, is considered as one of the most opulent of the clothing towns: it is charmingly situated on the side of a hill, sloping gently towards the *Calder*: most of the streets are regular, with handsome and spacious houses.

HUDSONFIELD is a fast-thriving handsome town, and threatens to rival Leeds: by means of the new Canal which joins the *Calder* at Cooper's Bridge, a communication is opened with Halifax, Wakefield, Leeds, York, and Hull.

HALIFAX is a large manufacturing town, which in the middle of the fifteenth century consisted only of thirteen houses; in 1606 it had increased to upwards of five hundred. From the vast extent of this parish it is supposed to have been a waste long after the Conquest; it is not mentioned in the *Domesday-Book*, and there never was any monastery or religious house in the whole parish, which covers one hundred and fifty square miles, and now contains twenty-six townships, and thirteen Chapels of Ease.

The shalloon trade was introduced into Halifax about the beginning of the last century; and figured stuffs at the latter half of the same period were manufactured, but afterwards declined; it has, however, been considerably revived. Frame-work-knitting was introduced in 1721, and is very prosperous: Sargos, Everlastings, Shalloons, Russets, Keseys, Baize, &c., are manufactured in incredible quantities, and are exported to all parts of the world.

Halifax is in the centre of the Woollen Manufacture, and possesses the advantage of water-carriage to Hull, and by means of the Rochdale Canal, which connects with the Duke of Bridgewater's Canal, this town and its entire vicinity are included in the general system of inland navigation.

SHEFFIELD is pleasantly situated upon an eminence at the junction of the *Sheaf* and the *Don*, over each of which is a stone bridge: the town extends about a mile in every direction. The Corporation here is peculiar; it has reference only to the principal manufacture of the place, and it is styled THE COMPANY OF COTTLERS OF HALLAMSHIRE: it is governed by a Master, two Wardens, six Searchers, and twenty-four Assistants.

The parish of Sheffield extends about nine miles from North-east to South-west, about five miles from North to South, and about six from East to West.

HULL, properly KINGSTON-UPON-HULL, is situated on the North side of the *Humber*, at the mouth of the river *Hull*. The Whale-fishery constitutes a principal feature in the trade of Hull, which sends more ships to Greenland than any port, London excepted; the inland trade of Hull has been reckoned greater than any other English port. The government of Hull is vested in a Mayor, Recorder, and Aldermen: the Mayor on all public occasions is clothed in a rich scarlet gown, with a gold chain round his neck, with the municipal sword carried before him, in an upright position.

Hull sends two Members to Parliament, and the right of election was formerly vested in the Burgesses, who had received their freedom from Birth, Apprenticeship, or from

Donation for public service. It retains the same number of Representatives under the Reform Bill, subject, of course, to the alterations made in the constituency by that Act.

HARROGATE, in the West Riding, is two miles North of Knaresborough, consists of two scattered villages distinguished by the name of High and Low Harrogate, nearly a mile distant from each other. The Cathedral of York is distinctly seen from High Harrogate, at a distance of twenty miles. It is much frequented by valetudinarians on account of the Chalybeate Spa, discovered in the sixteenth century: there are also Sulphur Wells at Low Harrogate; and both sorts are very beneficial to invalids, according to the nature of complaint they suffer under.

RIPON is a considerable market town, situated between the *Ure* and the little river *Skell*; it is a place of remote antiquity, as it received its first charter of incorporation in the fourteenth year of Alfred: it was a flourishing town soon after the decline of the Roman power. It suffered severely by the Danish incursions, and King Edred, in 948, destroyed it by a general conflagration: it speedily recovered its prosperity. In 1405, it became the residence of royalty, as Henry IV., being obliged to leave London on account of the plague, retired to Ripon with his Court.

MUNICIPAL GOVERNMENT OF YORK.

The Municipal Government of the City of York is vested in a Lord Mayor; a Recorder; two City Council; twelve Aldermen; two Sheriffs; twenty-four Assistants, called the Council of Twenty-four; Seventy-two Common Councilmen, and six Chamberlains. There is also a City Steward; Town Clerk; Sword-bearer; four Attorneys of the Sheriff's Court, and a number of inferior officers.

The Mayor is addressed by the title of Lord by all who write or speak to him: this honour was conferred by Richard II. This office is a place of great honour and trust: he is the King's Lord Lieutenant, and does not resign the ensigns of his authority to any one but the King himself, or the *Heir Presumptive* to the Crown. On public occasions he is habited in scarlet, with a rich mantle of crimson silk, and a massy chain of gold.

AGRICULTURE OF YORKSHIRE.

In the WEST RIDING the harvest generally commences in the middle of August, and, excepting in backward seasons, is wholly got in by the end of September. In the western parts, which are upland and hilly, the harvest is nearly a fortnight later than about Pontefract and Doncaster.

In this Riding there is much pasture-land, where grass is the chief object, and where cultivation by the plough is considered only in a secondary light. On the higher grounds

are immense tracts of waste pastured by sheep and cattle belonging to the neighbouring proprietors. From Ripley, southward, by Leeds, Wakefield, and Barnsley, to Rotherham, and to the *Ouse*, the soil is chiefly arable. The Moors lie principally in the South-west part of this Riding, above Penistone and Sheffield: they are principally for sheep, and a great part of them is common land.

In the NORTH RIDING, there being great diversity of situation and of altitude, there is equal variety in agricultural affairs: where the land is sheltered from the

breezes, the harvest ripens well; a dry soil generally hastens the harvest. The climate at the western end of the Howardian Hills is cold, and the corn late in ripening; but that of the eastern is milder; in the eastern moorlands the crops are often in the field when the country is covered with snow. The soils of the coast are various.

The level land near the Tees is a rich gravelly loam on the high grounds, strong and generally fertile; in some places however, cold and spongy. The dales that intersect the west moorlands are rich and productive, as are the smaller dales, which are very numerous.

The coast district is hilly and bold, and, of course, cold and bleak. The cliff of the coast is generally from fifty to one hundred feet high; the foot of the cliff is in some parts always washed by the sea; and all parts at high tides. From this cliff the level of the country rises very rapidly, in the space of half a mile to a mile, to the height of three or four hundred feet.

In the EAST RIDING, the soil of the wolds is generally a light friable calcareous loam, in some parts with flints and pebbles. Holderness has a fertile soil, and Howdenshire, with Ouse and Derwent, enjoy an earlier vegetation in proportion to the soil, than the clay lands. The cottages here are more comfortable than in many other parts of England, generally consisting of two lower rooms with two bed-rooms over them: many have portions of land allotted them for keeping cows.

We return our acknowledgment to the Proprietors of "Cook's Topography of Yorkshire," for their permission to avail ourselves of the information contained in that work. It has afforded us great assistance in the articles relating to that County.

The following Number of the *Graphic* (LVII.) will have the other *MAP OF YORKSHIRE*, so printed as to come opposite that in the present, thereby, as nearly as possible, presenting the advantage of a single Engraving. This is instead of making a Double Number, which has been objected to. That Number will also complete the Account of Yorkshire.

THE HUMBLE PETITION OF THOMAS SAFFIN'S GHOST, IN STEPNEY CHURCHYARD

We have been favoured with a copy of the following *verso d'esprit*, which explains itself. The Rector of Stepney and the Churchwardens granted the prayer of the Ghost's Petition. The tomb has been cleared and re-set; and the inscription re-traced. On digging round it, a stone was found, stating that the monument had been repaired in the year 1759, by Saffin's countrymen.

"List, list, oh list!"

"More last words."

For who, to dumb forgetfulness a prey,
This pleasing anxious being e'er resign'd,
Left the warm precincts of the cheerful day,
Nor cast one longing, ling'ring look behind."

To the Rev. the Rector and the worthy Churchwardens of the Parish of St. Dunstan's, Stepney, the humble Petition of the Ghost of THOMAS SAFFIN, gravely sheweth:—

That his, the said Ghost's body, hath lain in the Churchyard of St. Dunstan's, Stepney, for nearly a century and a half.

That a Tombstone with an Inscription was laid upon the same by the pious care of his surviving Father. (A)

That the said Inscription, by the injuries of the weather, and the corroding tooth of time, is nearly obliterated.

That the said inscription hath had the rare honour to be inscribed by two of the most eminent authors that ever adorned England, Addison and Johnson;—the former of whom illustrates a peculiar style in writing, by contrasting the said Inscription with another upon the monument of one DANIEL SAUL, (B) also buried in the same cemetery; and the latter praises your Petitioner, while yet in the body, as a wise man; that whereas he had the misfortune to be born in New-England, he, your said Petitioner, had the good sense to come to Old England to reside, where he lived until he died.

That in his nightly walks in and near the Church-yard, your Petitioner hath observed, with great satisfaction, the laudable care with which you have repaired sundry monuments attached to the walls of the Church; particularly the well known Tablet at the east end of your venerable edifice; recording in most interesting verse the humility of DAME REBECCA BERRY. (C)

That your said Petitioner in his nocturnal perambulations hath also seen the care bestowed by your honours on the Tombstone of the Ancient City of Carthage, and hopes that he whose dust is on the spot, may not be deemed less worthy of a permanent memorial than a heap of outlandish ruins. (D)

Your Petitioner, therefore, most humbly prays, that you will be pleased to order the inscription on his tomb to be re-cut, and also cause the encroaching earth and grass about his monument to be removed; that the memory of THOMAS SAFFIN, a man once favoured by his prince, may not perish from among men, but that future generations may read the Epitaph heretofore evaded into importance by the chaste humour of Addison, and the keen wit of Johnson.

And your Petitioner, the said GHOST,
will ever rest, &c.

The following are the Inscriptions alluded to in the above ghostly petition:—

(A) EPIGRAPH ON THOMAS SAFFIN.

Here Thomas Saffin lies interred; ah why!
Born in New-England, did in London die;
Was the third son of eight begat upon
His mother Mary, by his father John.
Much favour'd by his prince he gan to be,
But nipt by death at th' age of 23.
Fatal to him was that we small-pox name;
By which his mother and 2 brethren came
Also to breathe their last, nine years before;
And now have left their father to deplore
The loss of all his children, with that wife
Who was the joy and comfort of his life.
Deceased June 18, 1687.

(B) EPIGRAPH ON DANIEL SAUL.

Here lieth the body of Daniel Saul,
Spitalfields weaver; and that's all.

(C) EPIGRAPH ON DAME REBECCA BERRY.

Here lyeth interred the body of Dame Rebecca Berry,
the wife of Thomas Elton, of Stratford Bow, gent. who de-
parted this life April 26, 1696, aged 52.

Come, Ladies, you that would appear
Like angels fair, come dress you here.

Come dress you at this marble stone :
 And make that humble grace your own,
 Which once adorned as fair a mind
 As e'er yet lodg'd in woman kind.
 So she was dress'd, whose humble life
 Was free from pride, was free from strife,
 Free from all envious brawls and jars
 (Of human life the Civil Wars).
 These ne'er disturb'd her peaceful mind,
 Which still was gentle, still was kind.
 Her very looks, her garb, her mien,
 Disclosed the humble soul within.
 Trace her through every scene of life,
 View her as Widow, Virgin, Wife;
 Still the same, humble, she appears,
 The same in youth, the same in years,
 The same in low and high estate,
 Ne'er vexed with this, ne'er mov'd with that :
 Go, Ladies, now ; and if you'd be
 As fair, as great, as good as she,
 Go, learn of her HUMILITY.

(D) STONE FROM CARTHAGE WALL, NOW IN THE PORCH OF STEPNEY CHURCH.

The Stone on which these words are inscribed, was in 1708 a corner-stone in a porch on the north side of the Chancel. It was afterwards fixed in a buttress near the site of the Porch; and is now let into the wall within the west vestibule under the belfry. It is a stone of the sort used to make hones of; somebody having loosened it from its place, it was therefore kept in the parsonage-house till the repairs furnished an opportunity to fix it where it now stands.

INSCRIPTION ON A STONE FROM THE RUINS OF CARTHAGE.

Of Carthage wall I was a stone,
 O mortals! read with pity,
 TIME CONSUMES ALL ! it spareth none,
 Man, mountain, town, or city,
 Therefore, O mortals! all bethink
 Whereunto come ye must,
 Since now such stately buildings all
 Lie buried in the dust.

THE ANCIENT BRITONS.

In returning to this subject (see GUIDE, page 421) we are to notice—

1. The division of the Ancient Britons into Families, Tribes, and States.

2. The Importance of a correct Knowledge of their Pedigrees and Relationship.

3. The advanced State of their Political Organization at the period when Julius Caesar was repulsed in his endeavour to subjugate this island.

The individuals of every Family participated in the rights of the Family, according to the degree of their relation to the head of it. The children of each marriage shared the property equally among them; if there was no child, the relatives of the first and second degrees received this advantage. Kindred was acknowledged to the sixth degree, and the laws of Hoel say, "that there is not an appropriate name for relationship beyond that degree;" yet it is generally understood that kindred extended to the ninth degree;

and that all who desired to maintain the privileges of natives were obliged to establish, at least, this degree of kindred; since those who failed were reduced to the condition of aliens.

Each Family was responsible for the proper conduct of its members; and therefore the maintenance of the knowledge of kindred was of great importance, since each was to the others in the nature of a security, and of a responsible party. If any one insulted a member of another Family, such misdemeanour was punished by a fine, levied not only from the party offending, but from his near kin, upon whom it acted as a kind of punishment for not having better taught their kinsman.

It was received also and divided as a pacificatory donation among the members of that Family which had been insulted in the person of one of its relatives, and this retributive propitiation being received, they now no longer felt themselves aggrieved, or their powers and right of protection violated.

When we observe attentively the vast importance attached to the exact knowledge of an individual's degree of consanguinity to other members of the same tribe; when we consider the care and attention which parents would naturally bestow in teaching accurately to their children the different degrees of relationship which the various members of a family bore to each other, a knowledge which under particular circumstances might be of vast beneficial importance to possess, and of great detriment, inconvenience, and loss to be ignorant of;—we may then account, perhaps wholly, for the peculiar hereditary attention which our Cambrian brother-subjects pay to the transmission of their family pedigrees: a degree of attention which appears so strikingly remarkable, perhaps we may say so strikingly ridiculous, to one of that "mixed multitude, the Englishers," or "Sassenachs," whose whole genealogical knowledge generally consists in merely knowing that his "father was a cobbler," or, "that his family came out of Worcestershire;" and that he has "a great many relations somewhere, only he does not know where to look for them." If the reader should find cause to suspect the present writer of deriving his own pedigree from the Land of Leeks, and of possessing a host of cousins on the other side of Offa's Dyke, he must submit to the conjecture, and acknowledge that numerous suppositions have obtained implicit credence, although not supported by equally plausible circumstantial evidence.

A Tribe comprised a number of Families, and the Head of the Tribe was its Sovereign: his power was, indeed, truly patriarchal. Age was the criterion of dignity; and the Headship of the Tribe passed from one family of the tribe to another according to this distinction.

But although each Tribe was a state independent within itself, yet the Tribes sometimes united when they were pressed by danger; and the Heads of the Tribes usually selected, from among themselves, the oldest member of their body to become their Director; and, as we may say, their general Sovereign.

At the time of Caesar's invasion several tribes agreed in choosing Cassivallus (*Cassibellanus*) for their Chief and Commander; but there is reason to think that the whole nation did not meet in general deputation; that the sufferings of the South were little impressive on the inhabitants of the North or of the West; and that the spirit of rivalry, not to call it animosity, was too prevalent in the island to permit one general national effort to repel the expected invasion.

This is in some degree accounted for by the cir-

stance of there being several nations resident in Britain. The customs and peculiarities of these might differ, their interests might clash, or other causes might render them less desirous of promoting the welfare of each other, than they would have been had they descended from one common stock.

At the time of the Roman invasion the number of independent states was upwards of *forty*. Of these not more than three or four united to oppose the enemy. These were, for certain, the *Cantii*, or Kentish men; the *Regni*, or inhabitants of Surrey and Sussex; whose name is analyzed to *Hyy-Cantii*; and, perhaps, a few public-spirited individuals from other districts, or, it may be, the more warlike individuals of other tribes, anxious for military renown, or wishing to accustom themselves to the practice of martial achievements.

Although agricultural and pastoral nations have fewer occasions of war than commercial states, yet among even these the flames of discord will kindle and burn with fury.

The Britons are commended by Cæsar for the intrepidity with which they advanced to battle, a sure sign of having been inured to arms; a habit resulting not from rage, but from frequent recurrence of occasions in which valour was couched to the desire of distinction, and derived honour from becoming conspicuous.

They are described by other writers as not merely warlike, but as delighting in war; they sought the combat, and rejoiced in the contest. They were generally armed lightly with a spear and a shield, but some of them were both dexterous and vigorous in throwing stones. The skill with which they managed their war-chariots was remarkable. Their women, too, were brave, nor did they desert the post of danger when it was filled by those whom affection commanded them to assist.

They had various institutions among them of a social and religious description; they had also letters, notwithstanding what had been affirmed to the contrary; and *some* among them were learned, although learning was not a general characteristic of the nation.

To conclude:—When we take into consideration the firm and well-organized resistance which they offered to Julius Cæsar, we must perceive that among them the science of government had advanced to a high degree of perfection; and the term *barbarous*, in its usual acceptation, certainly was not applicable to them.

The constituted authorities must have had political emissaries on the opposite continent, or must have been in the regular receipt of public intelligence from those who visited their shores, or they could not have embodied so large, so well appointed, so disciplined a force as that which long held at bay the greatest general and best-trained troops in the world; and when, with the utmost difficulty, with almost negative success, and great loss, the Romans had effected a landing, the constant watchfulness of the islanders, the promptitude with which they were informed of the movement of every detachment, the rapidity and courage with which they seized every advantage, all point out that they consisted of brave troops used to obey, acting under the orders of skilful officers accustomed to command.

Nor should we omit alluding to that most important article of warfare, appropriately termed by our Gallic neighbours “ammunition for the mouth;” the support of so large a force as the patriotic Ancient British army must imply a well furnished and regularly-appointed commissariat; this implies public funds at the disposal of some accredited agent of the state, and includes in it an arrangement of political economy very far advanced beyond the desultory warfare of hordes.

The stupendous monuments which even now bear testimony to the science of their projectors, and the union of multitudes in the construction, would require a folio to do justice to them: in a future paper we shall attempt the enumeration of the more remarkable.

ON INATTENTION TO NATURAL OBJECTS.

The globe we inhabit abounds with objects both curious and surprising, yet multitudes of people, and those of the better sort, live fifty or sixty years upon it, without making the faintest attempt to become acquainted with them.

Does this proceed from a want of taste, or a neglect in accustoming the mind in early life to observation? Probably the latter, for surely none can see the beauties of Creation, and not admire them.

Children exclusively brought up in crowded cities, are lamentably deficient in this respect: they see scarcely anything but the works of art, and they associate the ideas of beauty and value to the productions of the mechanic only.

An insect is often an object of apprehension and abhorrence to them, when, if they had been taught to examine it in its true, its natural, its intended point of view, it would teach this important lesson, that the most insignificant of the Creator's works, are full of wisdom and goodness.

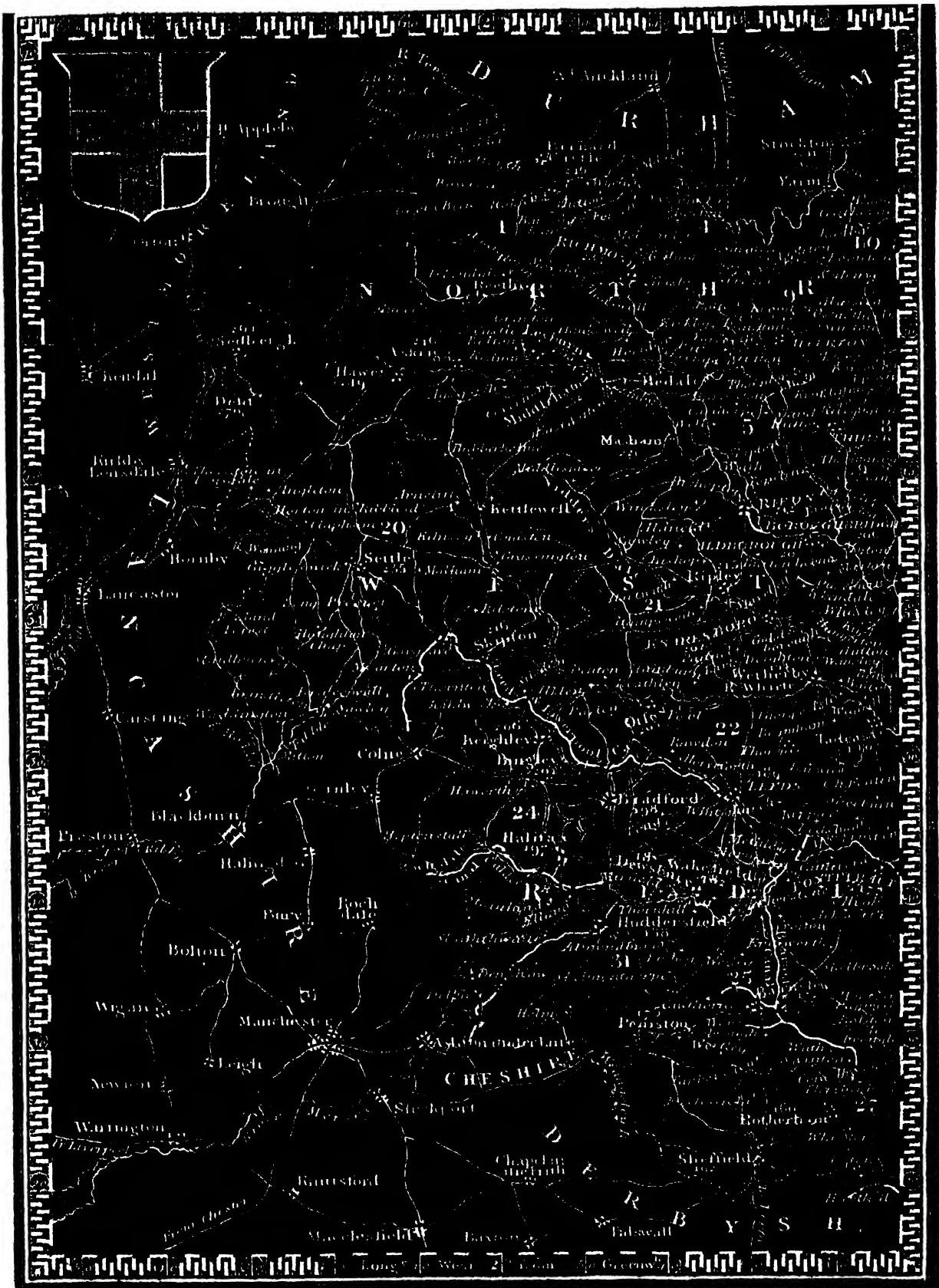
CURIOS POLITICAL, MEDICAL, AND PHILOLOGICAL MISTAKE.

At the battle of Wilna in 1658, Field-Marshal Gosiewitz was taken prisoner by the Russians. He was closely confined; but, being very ill, was allowed to be attended by an Italian surgeon of the Czar's household. One morning when the surgeon called, he found the marshal in the courtyard taking the air. They walked up and down together, so that the officer on guard could overhear their conversation, which turned on the nature of the disorder; although neither could speak the other's language, yet the Latin language, being understood by both, was the medium of their intercourse.

Amongst other things, the surgeon recommended *Cremor Tartari* (commonly known under the name of Cream of Tartar), which was known to be very efficacious in similar cases. The officer went immediately to one of the ministers, and informed him that there was some plot going on,—as the marshal and surgeon had been talking a great deal about the *Crem Tartari*.

Unfortunately the minister had received intelligence only the day before that the Tartars had begun hostilities. Nothing, therefore, was more probable than that the marshal and surgeon were acquainted with the circumstance, and had perhaps been the instigators.

The surgeon was sent for, and most severely reprimanded for his treachery. At first he was perfectly at a loss to account for the accusation, until the minister mentioned his conversation with the prisoner. With great difficulty the minister was, at last, convinced that he had not been discussing any political scheme, but merely recommending an innocent pharmaceutical recipe.



Long. to West 2° from Greenwich

YORKSHIRE.



THE GUIDE TO KNOWLEDGE. — A PRACTICAL AND USEFUL ATLAS OF THE BRITISH ISLES, WITH A HISTORY OF ENGLAND, AND A GENERAL HISTORY OF THE WORLD.

THE RIVERS AND CANALS OF YORKSHIRE.

This subject is so extensive that a very brief view only can be given.—For the Description of YORKSHIRE, see page 425.

WEST RIDING.

RIVERS.—The WEST RIDING is eminent for the number of its navigable rivers. The Ouse, so called when it arrives at York, but in the former part of its course called the Ure, rises near Westmoreland, and collecting many tributary streams in its course through the beautiful Dale of Wensley, in part of its progress divides the West from the North Riding; it finally loses its name in the Humber. It is navigable for vessels of 120 tons as high as York, where the spring-tides used to be felt to about the height of a foot and a half, but are now hindered by the locks below the City. The Ure is navigable to Ripon for barges of 30 tons.

The Don or Dun rises on the borders of Cheshire, and is rendered navigable to Sheffield.

The Calder rises in Lancashire, and five miles below Wakefield joins the Aire.

The Aire issues from the mountain Penygant, and by means of Canals is navigable to Leeds, Bradford, and Skipton; it falls into the Don near Snaith.

The Wharfe rises at the foot of the Craven Hills, and after a course of fifty miles across the Riding, keeping a great part of its course at the distance of ten miles from the Aire, falls into the Ouse.

The Nidd or Nydd rises in Maledale Forest, and joins the Ouse or Ure a few miles above York.

The Ribble rises among the mountains near Skipton, and running Southwards Settle and Gisburne, passes into Lancashire. There are many other streams of less importance, too numerous to specify.

CANAL in the West Riding.—The *Leeds and Liverpool Canal* begins at the Mersey, at the lower extremity of Liverpool, and in its course is carried over several rivers, until it arrives at Leeds, after a course of one hundred and thirty miles, with a fall of 858 feet; namely, from the summit level near Colne, to Leeds forty-five miles, fall 409 feet; thence to Wigan, fifty miles 393 feet fall; thence to Liverpool thirty-one miles, 30 feet fall. There is also a collateral cut from Skipton to Bacup.

The *Barker's Canal* joins the Calder below Wakefield, and passes Crofton, Farnsfield, and Doncaster, a distance of Barnsley; in length about fourteen miles. The fall from its junction with the *Derwent and Dove Canal*, to the Calder, is 120 feet: many railways are connected with it.

The *Dearne and Dove Canal* commences from the Don, and forms a junction with the *Barnsley Canal*: it has several subsidiary branches. Its whole length is nine miles and a quarter, with a rise of 125 feet from the Don to Birtley.

The *Stainforth and Keadby Canal* commences at the Don, about a mile from Fishlake, and finally joins the Trent: its total length is nearly fifteen miles, and as it runs through a part of the feney country, it has no lockage except out of the rivers at its extremities.

The *Huddersfield Canal* joins Sir John Ramsden's Canal on the South of Huddersfield, runs parallel with the Colne, and passes under Brunn Top, by a tunnel of nearly three miles and a half in length: it then joins the Ashton and Oldham Canal, on the South of Ashton, having run a course of nineteen miles and five furlongs, with 770 feet lockage.

NORTH RIDING.

The NORTH RIDING, considering its extent, has not many navigable waters, although the rivers and streams, provincially called brooks, are very numerous.

The principal is the Ure, rising near Westmoreland, running through the Wensley Dale; six miles below Boroughbridge it is called the Ouse, and at York leaves the North Riding.

The Tees divides the Riding from the County of Durham, during its whole extent, and is navigable for vessels of 30 tons from the ocean to Yarm, where the spring-tide rises seven feet.

The Derwent rises in the Eastern Moorlands, on coming to Malton it is navigable to the Humber for vessels of 25 tons burden.

The Foss is a small stream rising near the western end of the Howardian Hills, and unites with the Ouse at York. The Swale, the Esk, and the Rye, rise and flow for their whole course in this Riding, but are shallow, rapid, and liable to sudden floods.

The Cover, the Greta, the Leron, the Rical, the Dove, the Seven, the Costa, and many similar streams in this Riding, only serve the purpose of turning mills.

The Rye, the Rical, the Hodge-beck, the Dove, the Seven, and the Pickering-Beck, are all engulfed in the course of their passage on their arrival at the narrow range of limestone hills that skirt the southern side of the Eastern Moorlands, and again emerge into day at their foot on the northern margin of Risdale, after having been totally lost to view for the space of a mile and a half.

Nature has thus furnished the NORTH RIDING with navigable waters on one-half of its circumference at least; the Derwent and Ouse on the South; the Tees on the North; and the Sea to the East.

CANALS—Navigation has hitherto been assisted by art only in one instance, in the Canal from York to Stillington, a distance of about fourteen miles. Another proposed Canal, intended to pass down the Vale of York, and join the Tees and Ouse, will be a work of great public utility.

EAST RIDING.

RIVERS.—The Derwent is navigable for vessels of 70 tons, from its junction with the Ouse up to Malton.

The Ouse, from York to its junction with the Trent, is a smooth-flowing river, and conveys sea vessels to York; at the junction with the Trent it loses the former name, and is now called the Humber, which, from its great width and depth of water, admits vessels of any burden up to Hull; or, more properly, Kingston-upon-Hull.

The River Hull is navigable up to Fordingbridge, communicates with Beverley by a Canal, and another Canal carries the navigation from Fordingbridge to Driffield.

Exclusive of these navigable waters, many smaller streams and numberless rivulets add to the comfort and ornament of the country. The numerous brooks at the eastern foot of the Wolds are well known to anglers, under the general name of the *Driffield Waters*, which, with the Hull, abound in Trout of large size and peculiar excellence.

In many places, great drainages of *meres* and *cars* have increased the limits of cultivation, and diminished the domain of the angler. *Horn Mere* Holme Ness, is the largest in this part of England, being two miles long by three-quarters wide: the sea sometimes drives up the outlet, and destroys the fish at the lower part of it: it is interspersed with several wooded islands, and animated with water-fowl. It produces pike, eels, perch, and roach.

CANALS.—The Canals in the East Riding are, those already mentioned, from Beverley to Fordingbridge, and that from Fordingbridge to Driffield. Another Canal extends from the river *Hull* eastward to Leven, about three miles distant.

Market-Weighton and Hedon have the advantage of a Canal to the *Humber*, so that no part of the EAST RIDING is ten miles distant from water-carriage.

CLIMATE OF YORKSHIRE.

The Climate of the West Riding is in general salubrious, but the Eastern part being subject to fogs and damps is not esteemed completely healthy: there is more rain in the western than in the eastern parts of the Riding.

In the North Riding the climate of the coast from its situation is cold and bleak, but in the vales, sheltered from the westerly winds and the sea air, the grain ripens well: the Vale of York, or Mowbray, near the Moors, is cold, and the grain late in ripening; but in other parts milder and more temperate: the great altitude of the Eastern Moorslands renders the air cold and bleak. The Western Moorslands are liable to much rain, and the snow lies long on them. The general character of the Climate of this Riding is that of dryness throughout the year, and of peculiar coldness during the first six months: frosts occur in this Riding even in June, and vegetation generally lingers until that month is far advanced.

The Climate of the Wolds in the East Riding is severe and variable; the winds as they sweep over this plane and unbroken surface being extremely violent and penetrating. The North-eat winds generally continue with little intermission throughout the whole of March, April, and May, and some years even longer, retarding vegetation, and checking the growth of the trees and hedges. Nevertheless, the Wolds are extremely healthy, and the best harvests are gathered in the driest summers: but where the crops are exposed to the sea-fogs they are usually small, and the grain thick-skinned and coarse.

THE AINSTHEY OF THE CITY OF YORK.

This is a small district extending westward from York, forming a distinct jurisdiction, and cannot be included in any of the Ridings. It is bounded on the North-east by the Ouse, on the South-west by the Wharfe, and on the North-east by the Nidd.

This division, from its centrical situation, and the rivers which water it, possesses many advantages: the price of corn and other agricultural produce is therefore higher here than in the East Riding.

The County is generally level, with some gentle eminences: there is much wood: the whole Ainstey is fertile and the climate mild. Within this jurisdiction are thirty-four villages and hamlets, and one half of the market town of Tadcaster, the centre of Tadcaster Bridge being the boundary between the Ainstey and the West Riding. The farms are small; they breed good horses; but neither here nor at York are there any manufactures of note, except Gloves, called York Tan.

An account of a curious obsolete jurisdiction formerly exercised in part of this County called Halifax Gibbet Law, and also a brief history of the Manufactures of Sheffield, will be inserted in the next Number.

POPULATION OF YORKSHIRE.

The Summary of the Population of Yorkshire, in 1801, was as follows:—

	Males.	Females.	Total.
East Riding, including the City of York....	67,457 ..	71,976 ..	139,433
North Riding.....	47,094 ..	30,602 ..	155,506
West Riding	276,005 ..	287,948 ..	563,953

Totals.....	418,366 ..	440,526 ..	858,892
Showing an increase since that period of..	259,235 ..	253,172 ..	512,404

Totals (as under)	677,601 ..	693,698 ..	1,371,296
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The Population, by the Returns of 1831, amounted to

	Males.	Females.	Total.
East Riding, including the City of York....	98,524 ..	105,481 ..	204,008
North Riding.....	93,232 ..	97,641 ..	190,873
West Riding	485,845 ..	490,570 ..	976,415

General Totals	677,601 ..	693,695 ..	1,371,296
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REPRESENTATION OF YORKSHIRE.

In arranging the Representation of the City of York, a curious difficulty occurred: for it is central in regard to the three Ridings of that great County, each of which is for most purposes considered as a distinct County. York City has always hitherto been placed with the East Riding, without any assignable reason; the City is now placed distinctly as a County by itself.

Representation of the County.

North Riding.....	2
East Riding	2
West Riding	2

Total for the County.....	6
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Cities or Boroughs.—North Riding.

Northallerton.....	2
Richmond	2
Scarborough	2
Thirsk	1
Whitby	1
York	2

East Riding.

Beverley	2
Kingston-upon-Hull	2

West Riding.

Bradford	2
Halifax	2
Huddersfield	1
Knaresborough	2
Leeds	2
Pontefract	2
Ripon	2
Sheffield	2
Wakefield	1

Total	37
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Boroughs totally disfranchised under the Reform Bill:—Aldborough, Boroughbridge, and Hedon.

Boroughs losing one Member under the Reform Bill:—Northallerton and Thirsk.

ARMED FORCE OF THE CITY OF YORK,
IN 1549.

THE following is a very curious document of the time of Edward VI., detailing the musters of the City of York in the year 1549. The progress of population, arts, arms, commerce, &c., since that period is prodigious.

Citie of Yorke, with the Wapentake of the Aynstey and Liberties of the same.

The nombre of Light Horsemen and Speremen furnished, and able horses.....	8
The nombre of Archers, having harness and horses ..	55
The nombre of Arclers, having harness and no horses	53
The nombre of Archers, having nether horse nor harness ..	141
The nombre of Bylmen, having harness and horse....	136
The nombre of Bylmen, having harness and no horses	199
The nombre of Bylmen, having nether horse nor harness ..	453
The nombre of Persons not able, having harness and horses ..	14
The nombre of Persons not able, having harness and no horses ..	34
The nombre of Persons, having able horses and no harness ..	14
The nombre of able horses, with harness for demy launces ..	1
The nombre of Gonners, with hauebutts and handgonnes ..	8
Total	1116

LINES ADDRESSED TO A BROTHER,
ON HIS COMING OF AGE AND LEAVING HOME.
BY MISS ANN TAYLOR, OF ONGAR.

Over wandering in a stormy night
On a wild rocky shore,
A sudden slumber dimmed my sight,
And brought strange visions o'er.
I saw, methought, a venturous bark
From home's fair haven blown :
It glanced between the billows dark,
And rode the storm alone.
'Twas like a little shining speck
Tossed on the sea-green wave:
A thousand such had gone to wreck,
As gallant and as brave!
Its ballast light, its cargo less,
Hoisting a daring sail;
While many a signal of distress
Came mourning in the gale;
Scarce the lone mariner could keep
The pole-star in his eye,
With quicksands round him in the deep,
And whirlwinds in the sky.
" And can he live the storm," I cried,
" Launched in so foul a day,
And through a waste of waters guide
His long unmeasured way ?
" Hark ! for the tempest overhead
Roars to the angry blast :
" Already see the waves o'erspread
With many a splintered mast!" —

Straight, from behind the gathered storm,

A beam of glory brake :

I saw a light, but not a form ;

And thus the vision spake :

" Yes, he can live. Behold, afar,

" Beyond the tempest's roar,

" Hope hangs aloft her smiling star,

" Over a distant shore.

" Young steersman, spread thy fullest sail ;

" Let the long streamers fly

" The breath of heaven is in the gale,

" Its watchlight in the sky.

" Let not the mermaid's dangerous song

" Allure thee from thy mark :

" There fix thine eye, and urge along

" Thy yet unanchored bark.

" From gloomy deeps and liquid graves

" Her magic voice proceeds :

" Down to unfathomable caves

" Her treacherous music leads .

" But, cheer thee, mariner forlorn

" Th' horizon still is bright ;

" Nor tremble, though by tempests borne

" To such a land of light!"

It ceased ; and hope's returning tide

Filled the young steersman's soul :—

" Blow, angry winds, your worst," he cried ;

" And all ye billows, roll ;

" I'm but a voyager, though distrest,

" Bound to a distant shore :

" My fair inheritance possest,

" And I shall toil no more.

" The spicy groves to which I sail

" Send a sweet welcome here—

" Ye golden mountain-tops, all hail !

" That o'er the waves appear."

He seized the helia : the dashing foam

O'er his warm forehead broke :

I staid to bid him welcome home :

But started, and awoke.

REASON AND INSTINCT.

Reason and Instinct have obvious differences: yet the more intelligent animals, in some of their actions, approach so near to Reason, that it is really surprising how small the distinction appears.

The great and most striking superiority of Reason seems to consist in this point: the capacity of knowing and acknowledging our Creator and understanding his commands; this peculiarity of Reason has the solemn effect of rendering its owner responsible for his conduct in obeying those behests.

Reason also is capable of perpetual improvement; Instinct is not. However close, therefore, be their situation at any given time, if one stands still while the other advances, the distance between them will at length become all but infinite.

Which is the greater calamity of Man, the loss of Reason, or the misuse of Reason?

That which will incur the greatest punishment.

**ANIMAL
MALICE, OBSERVATION, RECOLLECTION, AND
RETALIATION.**

WHERE do the confines of Reason and Instinct abut on one another? What name can be given to that train of ANIMAL THOUGHT which produced the following extraordinary act of justifiable retaliation?

"A remarkable fact occurred some time ago in the park of Lord Granley, at Wonesh, near Guildford. A Fawn drinking, was suddenly pounced upon by one of the Swans, which pulled the animal into the water, and held it there until quite drowned."

"This was observed by the other Deer in the park, and did not long go unrevenged; for, shortly after this, this very Swan, which had never been molested by the Deer, was singled out when on land, and furiously attacked by the herd, which surrounded and presently killed the offender, without molesting the other Swans."

If a human observer had curiously seen the first occurrence, could he have been able afterwards to single out the culprit from his innocent associates?

Was the criminal, the MURKINER, conscious of the delinquency for which he so justly suffered? Would his companions feel the retributive justice of his punishment, and be wary of committing a similar crime?

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CRAKOLOGY;

**PHILOLOGICO-ORNITHOLOGICO-ETYMOLOGICO-LYXICO-COGRAPHIICO-ORTHOEPICO-GRAMMATICAL ESSAY,
INTENDED TO INVESTIGATE THE ELEMENTARY PRINCIPLES OF THE CROW LANGUAGE.**

THE Crow acquires more experience than most birds, because he lives long and travels much; which, as every one knows, is a great source of improvement. He does not suffer a man armed with a gun to approach him within its reach; but a stick does not excite similar alarm in him, and he gaily follows the ploughman very closely, to pick up the worms and grubs which the coulter brings to light: this is well known to country labourers.

Some have attributed this discriminating conduct to the glare of the gun or smell of the gunpowder, be it so: but nature produces neither guns nor gunpowder: in many parts of the globe which Crows frequent, their use is utterly unknown; besides, brown barrels are in fashion. It cannot be then by any innate instinct that they thus fly from gunpowder and fire arms.

What then must we infer from their conduct? That the Crow is a very sensible creature; that he knows by personal experience, by accurate observation, or by information derived from his elders, that these machines produce fire, smoke, and noise; and that in consequence of such fire, smoke, and noise, they wound and destroy. He knows besides that the power of man to kill lies in his fowling-piece, which he has discovered, has on'y a certain range, and this he wisely calculates as greater than it really is. A valuable hint to the venturesome, if they would but mind it.

The Crow is a bird of a very communicative turn of mind; a couple hardly ever meet without entering into conversation; this interchange of ideas must add vastly to their stores of information: even when two pass each other in flying, they usually exchange a few passing compliments, cautions, or observations. From their social disposition and from the knowledge acquired by Crows in their travels, is it not very

rational to infer that those among them who have been exposed to gun-shot even beyond the reach of it, or who have seen its destructive effects on other birds not yet so far advanced in the improvement of their natural faculties, for instance, on simple-hearted pheasants, or on innocent partridges, should fear it excessively, should have studiously applied themselves to distinguish guns and their effects, and should warn their companions of the danger attending them?

It is impossible as yet to say how far they can distinguish between the country sportsman and the Cockney sportsman: prudence however dictates that they should run no needless risk. The Crow therefore avoids the Bow-bell gun-man, although the object he means to aim at is completely out of harm's way: because, as he does not exactly know which eye to shot when he pulls the trigger, he invariably shuts both. Chance Medley, not Wilful Murder.

Whether there be among them any species of distinctive ranks and orders, like the words Hidalgo, Rajah, Pacha, Bey, Mandarin, and other similar titles among human creatures (without which useful appellations we should frequently be at a loss how to distinguish between the various species of human muck-worms, human gentles, human cheese-mites, and that most invaluable and important breed, human emmetts), is as yet only the subject of vague hypothesis. Some imagine that they have not yet attained to so decisive a mark of civilized improvement; others with equal probability conjecture, that these FREDONIANS of the Air have so far outstripped the human race as to have outgrown such "black, white, and Grey" distinctions. (See Note [A] at the end of this Dissertation.)

But the Author of "Bracebridge Hall," being himself a FREDONIAN, calculates that there is a due distinction and wholesome gradation of rank systematically adopted and pertinaciously maintained among them; and guesses, from the result of his own observation, that if the base-hatched dwellers in the low-boughed St Giles's, should intrude their undrugged presence among the elevated branches tenanted by the lofty inhabitants of the aerial St. James's, these latter privileged classes would immediately call in the aid of the Flying Police, and promptly teach the rabble-breed of intruders, that those Exclusives which "hatch high toos on," are not to have their vested rights invaded with impunity by the vulgar flight, in direct contravention to the enactments so explicitly detailed in the Thousand-and-first Ornithological Protocol.

But we have been too long beginning the commencement of the main object of this essay, namely, the *Language of the Crow Tribe*; (See Note [B] at the end of this Dissertation;) the reader will excuse the previous digression as pointing out some of the proofs (if proofs were requisite) that Crows have a Language; which is sufficiently evinced by the above-enumerated series of facts, evidently the result of mental intercommunication.

From the long experience and intense study which the writer of this Dissertation has devoted to this subject, and his familiar intercourse with many well-informed individuals of that nation, the writer has distinguished and appropriated innumerable modulations in their speech, although to the inattentive hearer it may appear almost monotonous. A few of these articulate sounds, as a slight specimen, are

* This inverted sentence is a quotation from the works of

"One of the eighty greatest living poets."—Lord Byron.

The Essayist is particular in thus acknowledging his obligations to the writings of others, as he is anxious not to appear in borrowed plumage, suffering under an agonizing horror of being deemed plagiaristic.

here presented to the reader, expressed as closely to the original as the imperfect state of the English Alphabet will permit.

Khrau, khra, khre, khri, khro, khrou,
Khraus, kras, khres, khris, khros, khrous,
Khraü, khraë, khreë, khrië, khroë, khrouë,
Khrankh, khrakh, khrekh, khrikh, khrok, khroukh,
Khrauo, khraö, khreö, khriö, khroö, khrouö.

Whether these sounds are entire words, like the Chinese, or Fee-su-fum language; or only syllables, like the English tongue; or single letters, like the deaf and dumb alphabet, had not been determined by the learned of the human race until the present time, although, beyond contradiction, a definite knowledge as to the truth of the above suppositions, is of far more vital importance to the well-being of mankind at large than the generality of those subjects which engage the attention of Most Learned Societies. (See Note [C] at the end of this Dissertation.)

If the endless varieties of intonation with which they use the accents and diacritical points were enumerated and specified, the above Table of euphonious cacophony might be prodigiously enlarged. Their language, like the German, is very guttural, and no one but a native-born Newcastle man can intelligibly articulate the burr with which every word is embroidered.

Specimen of the Crow Language.

The writer affirms, without fear of contradiction, that there is more intrinsic sound sense in the following dialogue, than in nine-tenths of the nonsense-verses which are written, published, set to music, and praised, under the specious name of Amatory Poetry.

SCENE.—*The topmost branch of a lofty tree.*

TIME.—*The Fourteenth of February.*

MR. CROW, JUNIOR.—*Dear, pretty, amiable, interesting,*
Khra, khriö, khroö, khraüë,
YOUNG, MISS CROW, *very, shiny, feathers!*
khrae, khraüö, khro, khrikh, khrouö, khreë!

MISS CROW.—*Young, Master, Crow, very polite!*
Khraë, khrouë, khro, khrikh, khrok!

MR. CROW, JUNIOR.—*Fine, Worm, Ground! Worm!*
Khri, khrau, khraukh! khrau!

Worm! Worm!—Fine, dead, Horse!
khrau! khrau!—Khri, khre, khros!

MISS CROW.—*Fine, dead, Horse?—where?*
Khri, khre, khros?—khroukh?

MR. CROW, JUNIOR.—*Smell! Field, Field, Field, Field,*
Khrot! khroë, khroë, khroë, khroë,

Field, — Fine, high, Tree! — Nest?

Khroë.—Khri, khrekh, kras! — Khri?

MISS CROW.—*Fine, high, Tree!*
Khri, khrekh, kras!

MR. CROW, JUNIOR.—*Build, Nest? Stick, Stick, Stick.*
Khraö, khrië? khrous, khrous, khrous.

A few remarks on the above Dialogue close this Essay.—

The Dialogue considered with regard to Rhetoric.

We take permission to call the observant student's attention to the beautiful simplicity of that figure of speech, the reiteration of the noun-substantive, which expresses the idea

* The writer could enlarge this vocabulary to a great extent with very little trouble; but forbears, holding in abhorrence and contempt the very reprehensible conduct of those quartoists whose only aim seems to be to make the length of their articles correspond in exact proportion with the gravity of their matter, the absurdity of their opinions, and the triviality of the subject they dilate on.

of abundance in the most natural, vivid, and emphatic manner: a mode of expression which may give a valuable hint to our most eminent orators.

The Dialogue considered in point of Arithmetic.

The corvine mode of Numeration demonstrates that the race is not yet very far advanced in this science, as the young suitor is compelled to repeat the word "Field," "Khroë," five times, in order to indicate that the delectable carion-carcass in question is situated at an interval of five fields, at which distance it is perceptible to the olfactory organs.

However, they must be regarded as having already surpassed those tribes of the human family, which, as voyagers inform us, cannot count beyond *three*. We know by personal experience that NUMBER ONE is a number the paramount interest of which is emphatically felt and vehemently insisted on among all tribes, savage or civilized.

The Dialogue considered in point of Politeness.

The very delicate and unobtrusive manner in which Mr. Crow alludes to his nest-building wishes and matrimonial hopes, shows a vast degree of gentlemanly well-bred consideration, as it cautiously avoids ruffling the feelings of his sable intended: while the amiable simplicity of the bride elect, in answering only *one* of his observations, should teach the Spinster this most important truth, that the semblance of bashful reserve, the appearance of retiring diffidence, and the guise of delicate modesty, best become her when first she listens to so interesting, so important, so obscure, so well-understood, so welcome an innuendo.

The Dialogue considered in point of Political Economy.

To contemplate this Valentine's-Day Colloquy as connected with the principles of Political Economy (the study of which has at least one great recommendation, namely, it bids fair to supersede scandal among the fair sex), it may be surmised that their natural good sense appears to have furnished them with those data and postulata which Mr. Malthus, Dr. Chalmers, and Miss Harriet Martineau, have arrived at by tedious circumlocutionary considerations.

For they appear to be convinced that they ought not to hatch a young brood until they have a nest to shelter them in, and plenty of worms and dead horses wherewith to feed the nestlings—expected, in order to obviate the sufferings which would result if the too rapidly-increasing numbers of the flight should inconveniently press on the means of subsistence. (See Note [D] at the end of this Dissertation.) The advantage of experience in the feathered race is beautifully enforced in Cowper's "Paining Time" anticipated."

After the insight which the reader now possesses into the principles of this language, there is no occasion to inform him that Crows can never be at a loss for words to express their meaning. Now many of our legislators, on the contrary, constantly begin their custom-spinning orations with the observation "Mr. Speaker, I want words!"—and then go on to prove incontestably that the difficulty they felt in beginning was nothing compared with the impossibility of discovering where to leave off:—a circumstance which can never occur in the Crow Nation, for if any one is too fond of listening to himself, the others set up a general clamour and drown his observations: on which he immediately settles down. The reader has no doubt often noticed this fact, but probably could not divine the cause until this explanation met his eye.

The writer, fearing that he might be accused, however unjustly, of wishing to prolong his observations on this important subject in an undue manner, has omitted several elu-

cidatory illustrations and explanatory observations; but lest the Reader should lose the benefit of them, he has thrown them together at the close of this investigation in the form of Notes.

EXPLANATORY NOTES AND ELUCIDATIONS RELATIVE TO VARIOUS SUBJECTS TREATED OF IN THE PRECEDING DISSERTATION.

Note [A].—**FREDONIA**, is the Yanochee neologicist appellation of that part of the terraqueous globe, which in obsolete systems of Geography was denominated “The United States of North America;” the derivative noun which designates the inhabitants (formerly called “Americans”) is the regular grammatically deduced word “*Fredonian*.” This elegant, home-brewed, new-fangled, auto-assumed nickname, was originated and adopted under a well-founded apprehension, that without some distinguishing noun-adjective, their Red Brethren, the really free savage inhabitants of North America, would be mistaken for the civilized ones.

Note [B].—Many learned naturalists will smile at what they will consider a mere vagary, yet the idea that animals possess a language, is by no means a new one. It was maintained by the ancients, who were much better observers of living nature than we are, and among others by Porphyry, Thales, Tiresias, and others. Melampus, and Apollonius of Tyanea, were said to have understood it. Many Jewish Rabbins, and even some Mohammedans, attribute the same knowledge to King Solomon, and the writer could easily swell this Note into a dissertation by inserting authorities on this subject; but in so doing, he would be merely making a pompous display of his acquirements, and an ostentatious parade of his reading: and as modesty and diffidence are the inseparable companions of exalted merit, the present writer leaves his pretensions on this subject to the good-natured consideration of the liberal-minded well-informed public in general, and of his present intelligent reader in particular.

Note [C].—This observation may seem to confer an unauthorised importance on the subject of this humble investigation; but the reader may take it for granted, that in a financial point of view, “according to Cocker,” it is of the most paramount necessity.

For beyond all possibility of contradiction, no Chancellor of the Exchequer for the time being, will be able honestly to pay off the NATIONAL DEBT, until the Lord Chancellor for the aforesaid time being, shall have completely solved all existing doubts on the subject of this Philological Essay, by forming a perfect Vocabulary of this hitherto shamefully neglected language.

Indeed, when we consider the well-known atmospheric abilities of the Crow Tribe (equal at least to those of the modern representative of FRANCIS MOORE, Physician) in foreseeing and prognosticating Changes of Weather, a science so important to the Agricultural Interest, we must be convinced that no subject has hitherto appeared in the pages of the “SOCIETY FOR THE DIFFUSION OF USEFUL KNOWLEDGE,” so pre-eminently important in a national point of view, as the present; particularly if the opinion of an experienced, well-travelled, elderly gentleman Crow could be obtained in hay-season or harvest-time: it would, “with the assistance of a good Barometer,” form an invaluable “SUPPLEMENT TO THE FARMER’s SERIES.”

Note [D].—It may be stated, on authority quite sufficient

to justify our giving publicity to the following article of LITERARY INTELLIGENCE, that one of the three writers whose names appear in the text, has in progress an invaluable work “On Locomotive Steam Carriages, in connexion with the Moral State and Moral Prospects of the Crow Tribe.” It will form a thick octavo volume, price twelve shillings.

The plan of the work includes,—

1. An Essay, illustrated by a Series of elaborate Tables, showing the Annual Mortality of Horses, under the present state of the Carrying Trade.

2. The number of Horses which will be dismissed that service, that is, be annihilated, under the Steam Carriage System.

3. The deficiency which will thereby be caused in the supply of Horse-flesh and Crow-meat, at the end of four centuries, calculated from the present year.

4. The result of an extensive series of comical experiments, incontrovertibly proving that Crows’ gizzards cannot digest worn-out Steam-Engine Boilers.

5. A solemn monition, warning the entire race to abstain from nest-building;—and

6. Arguments in support of a Proposal that VALENTINE’S DAY shall henceforward be kept every Bissextile, or LEAP-YEAR only.

As a matter of prudence it will be published anonymously, from a well-grounded apprehension that if the author’s name were known, the first time he ventured into the fields, the Hen-Crows would peck out his eyes in spite of his spectacles. The writer of the present Dissertation has the honour of being retained to furnish for the benefit of the Crow Nation a version of that important Essay.

ON THE LANGUAGE OF ANIMALS.

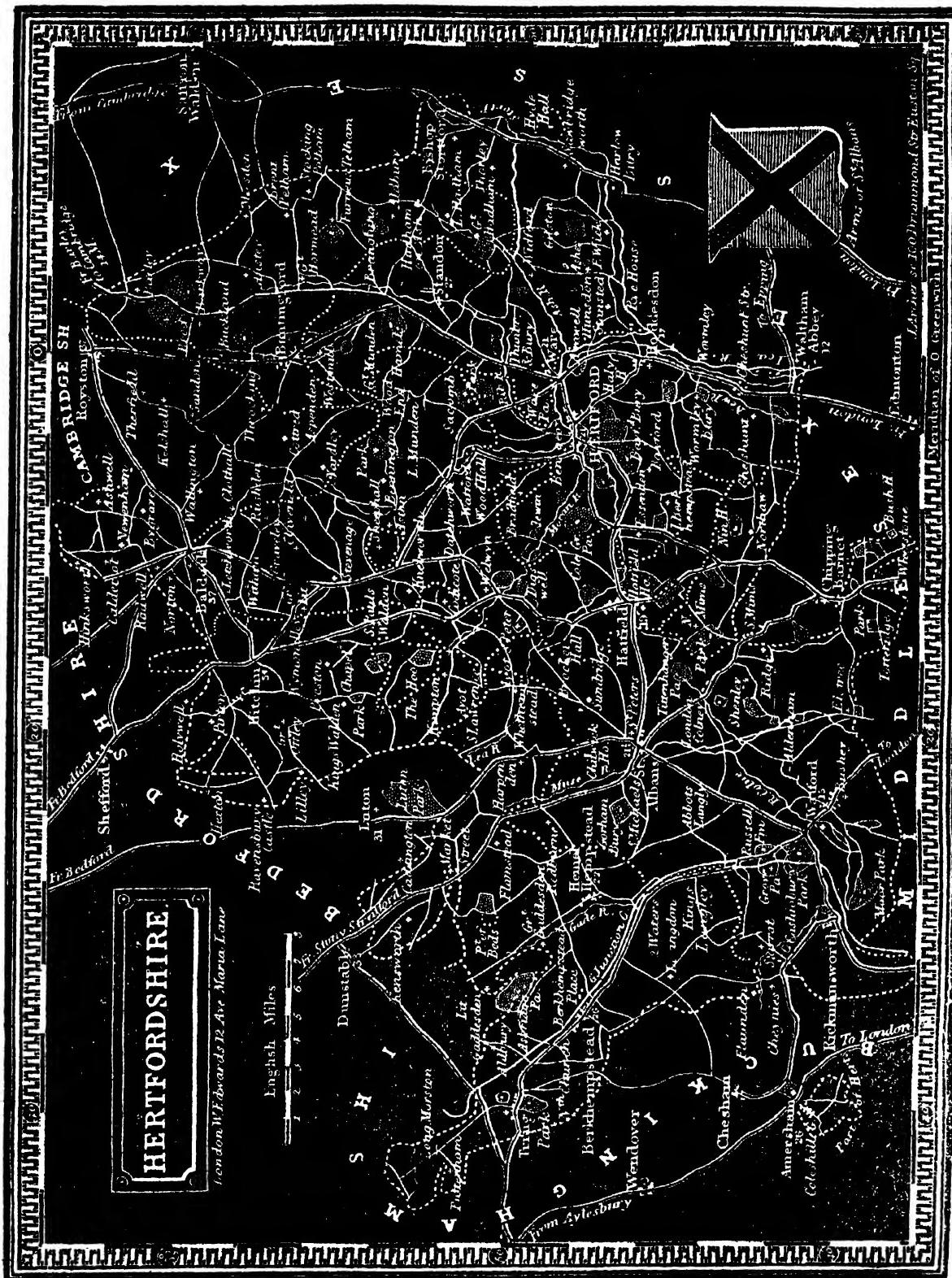
I SHALL not ask Jean Jaques Rousseau,
If BIRDS confabulate or no;
‘Tis clear that they were always able
To hold discourse, at least in fable;
And e’en the Child who knows no better
Than to interpret by the letter,
A story of a Cock and Bull,
Must have a most uncommon skull — Cowper.

“It was one of the whimsical speculations of the philosopher above named, that all Fables which ascribe reason and speech to animals should be withheld from children, as being only vehicles of deception: but what child was ever deceived by them, or can be, against the evidence of his senses?”—Note by Cowper.

PROGRESS OF INFORMATION IN THE EAST INDIES.

In Delhi, the ancient seat of the Mogul Empire, an English newspaper is now in a course of publication; and a newspaper, printed in the Persian language, has recently been established at Agra. How incalculable are the effects which may be produced by so extensive a spread of the means of disseminating knowledge of every description!

Erratum.—Page 410, vol. 2, line 18, for comical, read chemical.



HERTFORDSHIRE.

THIS INLAND COUNTY is divided into the eight following Hundreds, namely, Braughin, Broadwater, Cashio, Daenrun, Edwintree, Hertford, Hitchin and Picton, and Odsey. It has sixteen market towns, namely, St. Albans, Baldock, Barnet, Berkhamstead, Bishop's Stortford, Hatfield, Hertford, Hitchin, Hoddesdon, Rickmansworth, Royston, Standon, Stevenage, Tring, Ware, and Watford. As these are surrounded by agriculturists only, and do not possess any particular manufactures to arrest our attention, we shall only notice a few of them.

ANCIENT HISTORY.—Previously to the Roman invasion this County formed part of the territories of the *Cassi* and *Trinobantes*: at that period, Cassibelanus is said to have reigned at Verulam, now St. Alban's, and was elected Generalissimo of the British troops. When the Southern parts of this country were afterwards settled by the Romans, this County formed part of the district called *Flavia Caesariensis*.

Under the Saxon Heptarchy, Hertfordshire was divided between the Kingdoms of the East Saxons and Mercia.

SITUATION, BOUNDARIES, AND EXTENT.—This County is of a very irregular form. On the North it is bounded for a few miles by Cambridgeshire: at a small building called Knowle's Folly, the Counties of Cambridge, Herts, and Essex, meet. Essex forms the Eastern boundary, divided from Herts by the *Stort*, and from Bishop's Stortford to its confluence with the *Lea*, east of Hoddesdon, to Waltham Abbey, near which it quits Hertfordshire: from Waltham Cross to West Hide, Hertfordshire abuts on Middlesex; the western boundary is formed by Buckinghamshire: and Bedfordshire bounds it on the West and North.

Its greatest length is about thirty-eight miles, and its breadth about twenty-six miles: the extreme irregularity of its outline renders it very difficult to judge of its extent: it may be reckoned at about one hundred and forty miles in its boundaries; its superficial contents are estimated to amount to about 340,000 acres, or 530 square miles.

Herts is in the Province of Canterbury, in the Dioceses of London and Lincoln, and is in the Home Circuit.

CLIMATE AND SOIL.—The air of this County is mild and healthy: its surface in many parts is richly diversified in hill and dale: but to those whose ideas are limited to admire only the grand and magnificent scenes of nature, this County must appear tame and uninteresting: but although its features are of a milder cast, it still exhibits scenes of considerable beauty. For a great and commanding view over a rich vale, there are very few prospects which (without that most animating feature, a great river) are more striking than that which is seen from Lilly-hoo.

About Sawbridgeworth, Gilston, and Widford, the soil is clay and strong loam; in the vales, a drier loam lies on a gravelly substratum. Chalk can only be procured by digging; and then not of a good quality. From Pockeridge to Buntingford, the vales and the slopes adjoining are of considerable depth, and the soil is of a fine, rich, deep loam upon chalk.

The soils of this County mix and run into each other in a very remarkable manner, so that they cannot be traced and named with certainty.

AGRICULTURE.—The produce is chiefly the three principal sorts of Grain, namely, Wheat, Barley, and Oats; and, in the produce of these, it is esteemed little inferior to any County in England: in the neighbourhood of Rick-

orth, Sanet, King's Langley, Abbot's Langley, Flan-

ders, Bovington, and Watford, there are good and produc-

tive orchards. There are no mines in this County. Individuals manufacture Cotton and Silk, and also Straw-plait, which they dispose of at the weekly markets; in these manufactures a large portion of the female population finds a good living.

TOWNS.—The ancient borough of *Hertford*, which is the County Town, is situated on the *Lea*, twenty-one miles from London, in a fine pleasant country, and is surrounded by gentlemen's seats. The Saxon Monarchs often kept their court here; Alfred built a castle to defend it against the Danes, who, having a fortress at Ware, kept this part of the country in a state of constant alarm. *Hertford* has sent Members to Parliament ever since the year 1300.

Hailybury College is designed for young gentlemen intended for the East India Company's Service: it was originally established at Hertford.

Ware is populous market and post town, situated on the *Lea*: it was founded in 914 by Edward I. When the road was first made to pass through this town, a strong iron chain was placed across the bridge to prevent the passage of goods and carriages this way, to the disadvantage of Hertford; the keys of this chain were kept by the bailiff of that place, and nothing was allowed to pass without first paying toll to him. This obstruction was removed by the Earl of Winchester when he obtained this manor; from that period Ware has risen rapidly in trade and population, so as even to eclipse the more ancient and celebrated town of Hertford.

Royston is a market town, about thirty-eight miles North from London. Its name is supposed to have been derived from Roysia, a celebrated lady, called also Countess of Norfolk, hence it was called Roysia's town, to which Richard I. granted a fair and a market.

The chalk downs in the vicinity of Royston are frequented by a singular and beautiful species of Crow: the head, the under part of the neck, and the wings, are of a dark colour glossed over with a fine blue; the remaining parts are of a pale ash colour: they have broad and flat toes adapted to walking over marshy ground: they are migratory, arriving and departing about the same time with the Woodcock.

Bishop's Stortford is a market town of considerable size and consequence, situated on the *Stort*, in the centre of a rich corn country: large quantities of malt are made here: it has the advantage of a canal which joins the *Lea*.

Amwell is a pleasant village, which takes its name from Emma's Well, a spring which rises on the hill on which the church is situated, and forms one of the sources of the New River.

RIVERS.—The principal Rivers are the *Lea* and the *Colne*. The *Lea* rises near Lea Grave, in Bedfordshire, enters Herts near Bower-heath, and traverses the County from North-west to South-east, to its junction with the *Stort*, about a mile east of Hoddesdon; then runs nearly South, and partly forms the boundary of the County towards the East. The *Maran* or *Mimerum* rises near Frogmore, and with the *Beane*, which rises near Cromer, joins the *Lea* near Hertford: the *Stort* rises in Essex, and is navigable from Bishop's Stortford to the *Lea*, which is navigable from Hertford to its confluence with the Thames. There are many smaller streams, as the *Rib*, the *Quin*, the *Ash*, the *Verulam*, *Verlum*, or *Mize*, the *Gade*, and some others, but they are principally devoted to Mills.

CANALS.—The *Grand Junction Canal*, which commences at Braunton Wharf on the Coventry Canal, and runs to Old Brentford where it joins the Thames, and also to Paddington where it joins the Regent's Canal, enters Herts above Berkhamstead, and follows the course of the *Gade*, and afterwards of the *Colne*, until it enters Middlesex.

THE NEW RIVER derives its supply from the *Lea*, the *Maran*, the *Rib*, the *Quin*, and *Emma's Well*. Perhaps no artificial stream in the world can boast of such services to the health and comfort and well-being of almost countless multitudes as the *New River*. Commenced by Sir Hugh Myddleton upwards of two centuries ago, it has fully realized all his most sanguine expectations, and although it effected his total ruin, it has furnished a princely revenue to his assigns; but a casual notice like this cannot suffice for so extraordinary a work.

POPULATION OF HERTFORDSHIRE.

By the last Census the numbers were,

Males, 71,396. Females, 71,946. Total, 143,341.

The principal places in regard to numbers are,

	Males.	Females.	Total.
Braughin Hundred	8,971	8,856 ..	17,827
Broadwater Hundred	8,607	8,436 ..	17,043
Cashio Hundred	14,164	14,356 ..	28,519
Dacorum Hundred	14,183	14,689 ..	28,872
Hertford Hundred	6,842	7,128 ..	13,970
Hitchin and Hertton Hundred	5,244	5,467 ..	10,711

REPRESENTATION OF HERTFORDSHIRE.

For the County (without any division)	3
Boroughs—St. Albans (population 5,771)	2
Hertford (population 5,860)	2
 Total	7

J U N E.

"THE SAXONS called this month *Weyd-Monat*, that is, Meadow-Month; because their beasts did then *weyd* in the meadows, that is to say, goe to feed there: and hereof a meddow is also in the Teutonicke called a *weyd*; and of *weyd* we yet retain our word *wade*, which we understand of going thorow watry places, such as meadowes are wont to be."—VERSTEGAN.

In June the Sun rises with us to its highest place in the heavens on the 22nd day; but to the general observer its apparent meridian height will be the same for several days before and after. The times of the sun's rising and setting are as follows:—

	SUN RISES.	SUN SETS.
June 1, A. M.	3h. 53m. ..	P. M. .. 8h. 7m.
— 11, —	3 46 ..	.. 8 14
— 22, —	3 43 ..	.. 8 17

It is, however, quite needless in a table of this kind to quote the hour and minute of the setting of the Sun, if the rising is known, or vice versa; for if either be ascertained, then the other is immediately calculated by adding so much as will complete 12, which is the hour of noon, and therefore equidistant both from the rising and setting of the solar orb. For instance, if the sun rises on the 1st at 53 minutes after 3 in the morning, then it will set that day at 7 minutes after 8 in the evening, their two sums added together making 12. The same mode of calculation reckoned from the time of setting, will, with equal accuracy, ascertain the time of rising.

Warm weather is generally well established in June, but the heat is not frequently excessive: showers of rain are acceptable to the agriculturist at the commencement of the month, as tending greatly to promote the luxuriant vegetation of the earth's produce.

The hay harvest commences in the southern and midland parts of England towards the end of this month: but in this uncertain climate, the crop is frequently exposed to irretrievable damage, from sudden, violent, and long-continued rains.

The Flower Garden is usually in all its glory during June: innumerable herbs and flowers embellish our hedges, our fields and our gardens gratify our smell, purify the atmosphere, and cherish the hope of autumnal fertility.

Many pleasant fruits begin to ripen: the gooseberry, the currant, and the raspberry, present their delicious flavour, either as fruit for eating, or for the pie and the pudding.

The innumerable tribes of insects that the heat of the weather calls into life, afford a never-failing source of amusement and instruction to the admirers of creation's most wonderful works; and the microscope, with its miracles, is in full exercise.

Among the insect tribes, the most interesting to the moralist as well as to the naturalist, is that transient type of the brevity of human life, the *Ephemeron*, or May-fly. A few hours commence and terminate the hair's breadth of its aerial existence, as, after having passed its *aurelia* state as a denizen of the water, it seeks its final element, the air, at about six in the evening, and dies before midnight.

There are several species of this type of mortality. Near Heidelberg, on the banks of the Neckar, in Germany, there is a whitish sort which throng the air in the morning, but as the sun declines, they are showered down in amazing quantities, just like the withered falling leaves of autumn. "We all do fade as a leaf."

T I M E.

'Why sitt'st Thou by that ruined hall,
Thou aged Carl, so stern and gray?
Dost thou its former pride recall?
Or ponder how it passed away?"

Know'st thou not ME?" the Deep Voice cried,

"So long enjoyed, so oft misused?

Alternate in thy sickle pride,

Desired, neglected, and abused?

Before my breath, like blazing flax,

Man and his marvels pass away;

And changing empires wane and wax,

Are founded, flourish, and decay.

Redeem my hours— the space is brief—

While in my glass the sand-grains shiver,

And measureless thy joy or grief,

When TIME and THOU shall part for ever."

THE TRADE OF SHEFFIELD.

OUR intention was to have offered to our readers a general view of the COMMERCE of YORKSHIRE, as forming an interesting and important subject connected with that County. But as an Encyclopedia of Commerce would not be more than sufficient for such an undertaking, the following brief History of the Trade of Shefield is alone offered to our supporters.

It appears from the Town Seal, and other circumstances, that Shefield has been a Staple for Iron Manufactures from the year 1297, especially for Falchion Blades, Arrow Heads, and an ordinary sort of knives called Whittles, which were much used by the Welsh in close combat.

In process of time, other articles of more mercantile importance being invented, the Cutlery Trade was pursued in the town and neighbourhood, consisting of the manufacture of Shears, Knives, Scissors, Scythes, Sickle, and similar implements of iron and steel: afterwards they fabricated an ordinary sort of iron tobacco-boxes.

In the year 1638, they commenced the making of Files and Razors: in 1640, the manufacture of Clasp-knives was introduced, having iron handles: in a short time their handles were made with a covering of horn, bone, tortoise-shell, then afterwards with ivory, and more ornamental substances.

Still, however, it should seem that for nearly a century succeeding, the Sheffield Manufacturers evinced more industry than ingenuity or enterprise: as the workmen durst not exert to the utmost their abilities in labour, for fear of being overstocked with goods, as their trade was inconsiderable, limited, and precarious.

Their traffic was confined to this island, beyond the limits of which they did not presume to extend it; most, indeed, were contented to await the coming of a casual trader, rather than to carry their goods to an uncertain market, attended by great labour and expense: the produce of the manufactures being carried weekly to the metropolis on pack-horses.

About fourscore years ago, a gentleman, of the name of Joseph Broadbent, first opened a trade with the Continent direct; in 1751, the river Don was made navigable up to within three miles of Sheffield, whereby the conveyance of goods abroad was greatly facilitated. About the same time, the Master Manufacturers commenced the plan of visiting London with specimens of their wares in search of orders; that step was followed by great success.

Several of them now established a regular correspondence with various cities on the Continent, where some opened counting-houses, having foreigners as their clerks and managers. The roads at home were improved, travelling thereby facilitated, secured, and expedited, and Great Britain and Ireland were thoroughly explored in search of extended trade. The Fairs in different parts of the kingdom annually decreased in their importance, because the shopkeepers in the country towns could easily be supplied by orders sent by post at any season of the year.

A manufacturer of the name of Bolsover had long made Plated Buttons: in the year 1758, an ingenious mechanic, Mr. Joseph Hancock, applied his skill in fabricating other articles of plated ware, comprehending a great variety of domestic implements, such as Saucepans, Tea Urns, Coffee Pots, Cups, Tankards, Candlesticks, Plates, Dishes, and innumerable other useful or ornamental goods: this branch of the trade of Sheffield has since been carried to very great, perhaps we may venture to say, unrivalled perfection by many houses, whereby the wealth and population of the town have been greatly increased. So that wheresoever Plated goods are fabricated (except Town-made articles) they are, nevertheless, by way of recommendation, generally sold under the denomination of Sheffield Plated Ware. A List of Goods made at Sheffield now, would include an enumeration of almost every article in which any sort of metal forms a constituent part.

The Cutlers and Smiths' Manufactures are encouraged, advanced, and supported, by the proximity of the mines of iron, as well as the great facility of water carriage. Here are upwards of six hundred master manufacturers, incorporated under the title of the Cutlers of Hallamshire, of which this is reckoned the chief Town: the Act of Incorporation was passed in 1625, and amended in 1791. It is governed

by a Master, two Wardens, six Searchers, and twenty-four Assistants. The Master is elected annually on the last Thursday in August, after having passed through the subordinate offices.

And this remarkable peculiarity may be observed in the organization of this Company, viz., that these are not merely Offices of an Incorporated, or Chartered Company, or Guild, but are absolutely Municipal Offices, the Master Cutler being equal in rank and dignity to the Mayor, and the other functionaries ranking in a similar manner with the municipal offices of other towns; this is a striking proof of the great importance attributed to the trade of this celebrated manufacturing place.

A very short description of Sheffield and its situation has been inserted in page 427.

This account of the rise of Sheffield, which commences with manufacturing falchions, arrows, and knives, and now supplying the whole world with every species of metal ware, may be taken as an epitome of the Manufactures, Trade and Commerce, first of Yorkshire, and secondly of the United Empire.

HALIFAX GIBBET-LAW.

HALIFAX is noticed in page 427, as one of the principal manufacturing towns of Yorkshire.

The Manor of Halifax is a part of the very extensive Manor of Wakefield. Great part of it was anciently called the Liberty of the Forest of Sowerbyshire, or of Hardwicke. Within this Liberty was a very singular ancient custom, which long prevailed, called HALIFAX GIBBET-LAW.

It consisted of a summary mode of trying and capitally punishing felons, it is supposed of thieves only, who were taken within the Liberty, with the goods found upon them, or on their own confession; and the mode of execution was, the beheading by means of an instrument called a GIBBET, which was made of two upright pieces of timber (connected by a transverse piece at the top), within which were grooves, in which worked a heavy square block of wood, armed at its under side with an iron axe. This being drawn up, was let down suddenly, and thus the malefactor's head was cut off.

An engine exactly of the same kind was for some time in use at Edinburgh, where it was called the MAIDEN: which of these two was the original, and which was the copy, is not known. This instrument of death was revived in France during the reign of terror, under the too famous name of the GUILLOTINE, and which was regarded as being the original invention of the person whose name it bears.

With respect to this at Halifax, it appears to have been very freely used, especially after it became a manufacturing town, against the robbers of tenter-grounds. The last executions by it were as late as 1650; the practice was then put a stop to, the Bailiff being threatened with a prosecution if he should repeat it. Forty-nine persons had suffered by it, from the first entries in the Register to the year 1541. A raised platform of stone, on which the GIBBET was placed, is still remaining in Gibbet-lane, which derives its name from the instrument.

Mr. Pennant gives the following account of these remarkable local customs:—

"The time when this custom took place is unknown. Whether Earl Warren, Lord of this Forest, might have established it among the sanguinary laws then in use against the invaders of hunting rights, or whether it might not take place after the Woollen Manufactures of Halifax began to

gain strength, is uncertain. The last is very probable; for the wild country around the town was inhabited by a lawless set, whose depredations on the Cloth-tenters might soon have stifled the efforts of infant industry.

" For the protection of trade, and for the greater terror of offenders by speedy execution, this custom seems to have been established, so as at last to have received the force of the law; which was—

" That if a felon be taken within the Liberty of the Forest of Hardwick, with goods stolen out or within the said precincts, either *hand-habend, back berand, or confessionard*,^{*} it to the value of thirteenpence halfpenny, he shall, after three market days, or meeting days, within the town of Halifax, next after such his apprehension, and being condemned, be taken to the GURTER, and there have his head cut off from his body.

" The offender had always a fair trial: for as soon as he was taken, he was brought to the Lord's Bailiff, at Halifax; he was then exposed on the three markets, which were then held thrice a week, placed in the stocks, with the goods stolen on his back, or if the theft was of the cattle kind, they were placed by him; and this was done both to strike terror into others, and to produce new informations against him.

" The Bailiff then summoned four freeholders of each town within the Forest, to form a jury. The accused and his prosecutors were brought face to face; the goods, the cow, or horse, or whatsoever was stolen, produced. If found guilty, he was remanded to prison, had a week's time allowed for preparation, and then was conveyed to this spot, where his head was struck off by this machine.

" This privilege was freely used during the reign of Elizabeth; the Records before that time were lost. Twenty-five suffered in her reign, and at least twelve from the year 1623 to 1650; after which, I believe, the privilege was no more exercised. This machine of death is now destroyed."

It should seem that theft was very common in the neighbourhood of Halifax, and that the law was rigidly enforced, especially when we notice the great number which were executed, and consider the comparatively small number of the population of that period.

The two preceding articles form part of the ACCOUNT OF YORKSHIRE which was commenced on page 425, and continued on page 435. The Population in our next.

THE LIBERAL SAVEALL.

Two gentlemen were deputed by the Committee which had the management of a Benevolent Society,[†] to wait on an individual whose character stood high both for wealth and beneficence. Detained for a few minutes in the parlour, they heard through the partition the gentleman expostulating with his housekeeper in terms of great severity, for her criminal prodigality as exemplified by her having used one end of a match to obtain a light, and burnt the other end, instead of replacing it in the tinder-box.

" It is of no use to stay here," said one of the gentlemen to his friend, " it is a mere waste of time; what can be expected from such a miserly elf?" The other gentleman expressing his great astonishment and amusement at such an

That is, " having it in his hand, bearing it on his seeing the fact."

unexpected and curious dialogue, agreed in the opinion, but prevailed on his friend to wait at least until they had heard the excuse which so consummate a skiaflint would fob them off with.

On being introduced to him, and stating the object of their call, and the design of the Society whose cause they had undertaken to plead, he entered fully into the conduct and merits of the Institution, and, having acknowledged himself convinced of its utility and good management, he handed over to them a ten-pound Bank-note, in furtherance of the cause recommended to his support.

The astonishment they felt was so strongly depicted in their countenances, that he asked " what surprised them so?" The urbanity of his manner emboldened one of them to narrate the colloquy which they had unintentionally overheard, and begged to ask, if so great a liberty would not be deemed impertinent, —how to reconcile such contradictory circumstances, as the saving of half a match on the one hand, and the liberal donation now bestowed on the other hand?

" My good friends," said the Donor, " one fact explains the other:—for if I did not save my half matches, how should I be able to give my ten pounds?"

THE GENEROUS MISER.

That Money will multiply Care,
Philosophers foolishly teach:
They prove that their pockets are bare,
When such silly maxims they preach.

It gives the sweet pow'r to impart,
What fortune denies, to the brave,
To gladden the Widow's sad heart,
To redeem the unfortunate slave.

My Money I keep quite secure;
I hoard, that the poor may partake;
Reproach and Contempt I endure,
And starve, for Humanity's sake.

Let them freely enjoy their abuse,
And call me a miserly elf;
I save—but 'tis not for my use;
I'm a Niggard—but not for myself.

Tis better to give than to have;
My wealth with me never shall stay;
My orts and my matches I save;
My pounds I give freely away.

THE NEGRO MATHEMATICIAN AND ASTRONOMER.

How often are we told that the intellect of the Man of Colour^{*} is naturally constituted of a character inferior to that of his white brethren! Can it be said that a man who has had no opportunity of acquiring mathematical science, is therefore incompetent to acquire it? Yet this is the argument of numbers of whites, who, if this mode of reasoning be correct, must be inferior in natural talents to the individual whose attainments are the object of the reader's attention.

If any one should adopt so inconclusive an argument, let him reply to this question: " Can you calculate an Eph-

or | * Man of Colour an expression in general use signifying a Negro.

merit?" * If the reply is in the negative, then, in fairness, the respondent must acknowledge his inferiority of intellect to the coloured subject of this brief notice.

Benjamin Banneker was a black man, immediately descended from parents on both sides of pure African blood. He was remarked and esteemed in the circle of his acquaintance for the correctness and gentleness of his manners, and was well known and respected among scientific men as a Mathematician and Astronomer.

In early life, his acquirements were confined to the common elements of education; but afterwards, assisted by such books as chance threw in his humble path, and incited by his thirst for knowledge, supported by his own indefatigable mental energy, and guided by his genius alone, he acquired an extraordinary knowledge of the higher branches of learning.

Mingling the calm pursuits of science with the active every-day occupations of husbandry on his own land, he devoted much of his time to study and contemplation: to no reading was he more attached than to that of the Holy Scriptures. Mr. Banneker was for many years the calculator of an Ephemeris adapted to the geographical situation of the State of Maryland, North America, and generally used in that and the neighbouring states. He died some years ago at his residence in Maryland, in the seventy-third year of his age.

Is it not revolting to reflect, that, under less favourable circumstances, this Negro Newton might have expired under the tormenting lash of an ignorant, brutal, soul-less, unfeeling taskmaster, accused, perhaps falsely accused, of having dug fewer cane-holes, or cut fewer canes, than avarice demanded, caprice ordered, tyranny exacted, or cruelty enforced?

MEMOIR OF JOHN STOW.—WITH A PORTRAIT.

JOHN STOW, a valuable historian and antiquary, was born in London, in 1525, of a respectable family, and bred up to his father's business, a tailor. It is remarkable that Speed also, another eminent antiquary, was originally brought up to the same business. In 1549, he dwelt within Aldgate; during his residence there he was the unwilling and deeply-afflicted spectator of an execution which took place opposite his own house, under the following remarkable circumstances; so remarkable indeed, that nothing but the most positive, direct, and undoubted testimony could induce the belief of such a wanton abuse of tyrannical power.

The Bailiff of Romford, coming up to town during an insurrection which prevailed in Norfolk and Suffolk, and had spread into some parts of Essex, happened to fall into company with the Curate of Cree Church, called Sir Stephen, a most furious bigot: on being asked the news of his neighbourhood, he replied that "many were up in Essex, but that, thanks be to God, things were in good quiet about them."

The Curate, from some misconception of these words, immediately informed against the poor Bailiff, representing him as one of the rebels, or a favourer of their cause. On this he was next morning brought before a Court Martial, and sentenced to be hanged in the parish where he had uttered the above words, upon a gibbet erected before Stow's door.

* *Ephemeris* is from a Greek word signifying "*daily*," and is appropriated in science to a register, calculated beforehand, of the daily motions and situations of the heavenly bodies. In Navigation it is of the utmost importance, and the compilation is committed to the care of our most eminent astronomers.

Stow was, of course, a witness of this tragic scene, and heard the poor man's dying declaration respecting the words which he had made use of, and which were the only pretext for this arbitrary execution. Stow afterwards removed into the parish of St. Andrew Undershaft, where he resided until his decease.

He began to apply himself early to the study of the History and Antiquities of England, and with so much enthusiasm as materially to injure his own business: he was thereby reduced to considerable difficulties. His first essay as an antiquary was in favour of his own Ward: as that of Bishopsgate had encroached on it. Stow, by his antiquarian researches, fully proved that the premises in question were anciently part of his Ward, by means of old leases, and grants, and other authentic documents.

His success in this affair probably animated him in his antiquarian researches, as he had thus demonstrated the practical benefit resulting from them; in 1560, he turned his thoughts to the compiling an English Chronicle, and he spent the greater part of his subsequent life in collecting such materials relating to the country at large, as he esteemed to be worthy to be handed down to posterity.

Finding, however, how profitless this occupation was likely to prove, and how detrimental it was to the business from which he derived his support, he had nearly determined to abandon it, when the encouragement and pecuniary assistance of Archbishop Parker persuaded and enabled him to proceed.

The first work he published was the "Summary of the Chronicles of England, from the coming of Brutus to his own Time." In 1600, he published his "Flores Historiarum; or, Annals of this Kingdom, from the Time of the Ancient Britons to his own." This work was his "Summary" greatly enlarged: it was the abridgment of a much larger work on which he had been engaged upwards of forty years, which would have been published, had not the printer been deterred by prudential motives, resulting from the recent appearance of Holinshed's work on the same subject.

In 1598 appeared the first edition, in quarto, of that valuable work, "A Survey of London." It was dedicated to the Lord Mayor, Commonalty, and Citizens, and contains the names of the Lord Mayors and Sheriffs to the year of its publication.

However valuable, important, and useful, his indefatigable labours were to his fellow-citizens, it appears that they were productive of no benefit to himself, as we find him petitioning the municipality of London for some yearly pension, in consideration of the great number of years which he had devoted to their city and its history. We cannot now ascertain whether this boon was granted; he was indeed appointed *FREE CHRONICLER*, to which office probably a very small salary was annexed. It was not sufficient to retrieve his ruined circumstances, nor even to afford him a maintenance, so that he was forced to beg a *Brief* from James I. to enable him to collect the charitable benevolence of well-disposed people.

To the liberal feelings of the present day, it must appear strange that such a man should be reduced to so lamentable a situation, and that neither the opulent City of London, whose service and credit he had so greatly advanced by writing such an elaborate and accurate account of it; nor the wealthy Company of Merchant Tailors, of which he was a member; nor the State itself,—should have thought it a duty to save such a person from want, one to whom they were all so highly indebted.

The License or *Brief*, by which the king empowered him to beg, was a libel on his own bounty, and the produce of it, so

[JUNE 8, 1833.]



JOHN STOW, HISTORIAN AND ANTIQUARIAN, 1525—1605.

far as we are able to judge, fixes a deep reproach on the charitable feelings of the citizens of London of that day, if we may estimate the sum total of contributions collected on this occasion by what was gathered from the parishioners of St. Mary Woolnoth, which amounted to no more than seven shillings and sixpence.

In this abject state of poverty he died, April 5, 1605, in his eightieth year, and was buried in his parish church. And he who had been so neglected during his lifetime, was treated with corresponding indignity after his decease. Blailead, after paying a just tribute to his memory, adds, "that neither that, nor any other consideration, was sufficient to protect his repository from being spoiled of his remains in 1732, by some persons who removed his corpse to make room for that of another person!"

His indefatigable industry in copying out manuscripts, records, registers, journals, charters, ancient customs, and chronicles of particular places, fully demonstrates his enthusiastic love for his favourite studies. He copied Leland's six volumes of collections for his own use, which he afterwards sold to the celebrated Camden his contemporary,* who gave him for these an annuity of eight pounds during his life.

He was a true antiquary, one of the right stamp; he was not satisfied with reports, nor yet with what he found in print, but always had recourse to originals. He travelled on foot (for he could never ride) to many Cathedral Churches, and other places, where ancient records and charters were to be found, to read them, and to make large transcripts into his collections.

His moral practice was unblamable: he hated vice in all orders, and exposed it no less to the clergy than to the laity: he abhorred injustice, and spared not rebuke to all who were guilty of it: he was a lover of hospitality, and a great friend and supporter of public benefactions, as long as he had a vestige to bestow: he was of an amiable and generous disposition, and unspotted in his life.

We must entreat our readers to turn to the Life of Camden (page 408), and a striking contrast will thereby be noticed, which may seem very extraordinary, and at this distance of time cannot be accounted for. Camden left England from poverty, amidst great wealth as an antiquarian, while the worthy subject of these memoirs appears, to following the very same pursuits, to have gradually sunk from competence, if not from affluence, to a state little short of absolute want.

* See the life of this eminent Antiquary, page 407.

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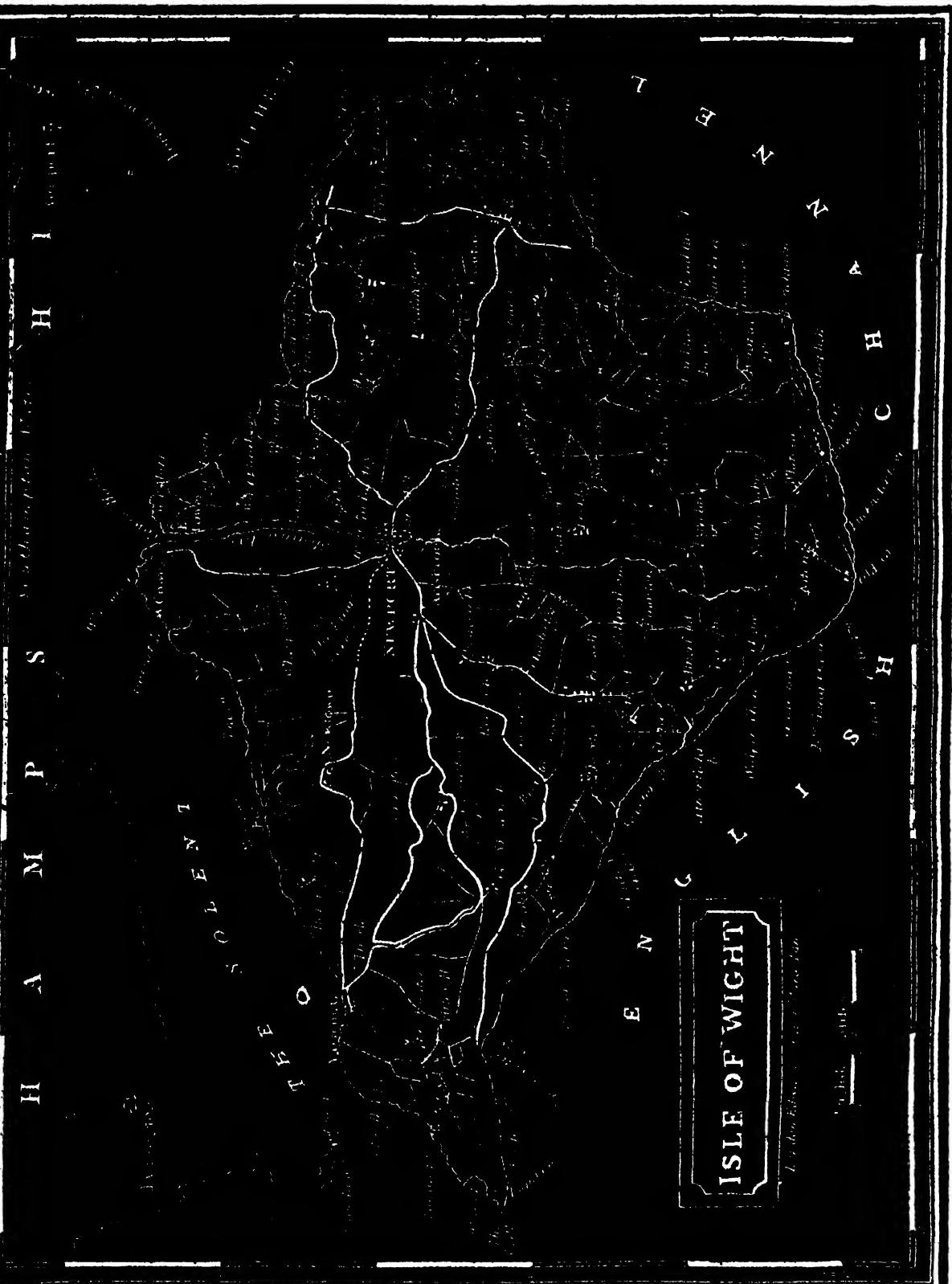
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ISLE OF WIGHT.

GENERAL DESCRIPTION.—This island enjoys a most convenient situation, nearly in the centre of the southern part of the English coast, and at a very short distance from it, directly opposite to *Portsmouth*, the most considerable naval station and arsenal in the United Kingdom. This circumstance is highly favourable to its commercial intercourse, not only with Hampshire, of which it forms a considerable division, but with the main island in general.

To the South, it has the full advantage of open sea, as *Cape La Hogue*, in France, the nearest land in that direction, is at eighteen leagues distance. To these natural advantages must be added the sight of the *NAVY OF BRITAIN* riding in grandeur and majesty, the whole view combining in its general effect such a scene of magnificence, both of nature and art, as the whole world cannot equal.

The Channel between the island and the main is called the *Solent*, and varies in its breadth from five to six miles over; but opposite *Hurst Castle* there is so great a projection of land towards the Island that the distance between them is diminished to about a mile.

The form of this Island is that of an irregular rhombus or lozenge, measuring about twenty-two miles from the Eastern to the Western angle, and thirteen from the Northern to the Southern, being about sixty miles in circumference; it contains about one hundred thousand acres, of which nearly three quarters are arable, the rest pasture.

The Island is divided into the Hundreds of *East* and *West Medina*: it contains thirty parishes; three boroughs, *Newport*, *Newtown*, and *Yarmouth*. It is included in the Diocese of Winchester, in the Province of Canterbury, and in the Western Circuit.

The air throughout this Island is very salubrious, and the face of the country is beautifully diversified: the eye of the traveller is enchanted with a continued series of new and surprising prospects, sometimes of the most romantic seclusion and privacy, and in a few paces more, of most magnificent and extensive sea views with all their stupendous accompaniments.

The whole country is very fertile, the basis of the Island is a close black clay: the higher parts present vast masses of calcareous substances. The exports of Grain are very considerable, as it produces twelve times its own consumption. The meadow land is rich, and yields a large quantity of excellent hay.

TOWNS.—*Newport*, eighty-nine miles from London, is a borough and market town, situated nearly in the centre of the Island, and, from that circumstance, the principal mart for its trade. The tide flows up to the town, so as to give all the advantages of a navigable river. The Annual Fair is in Whitsun week. *Newport* was incorporated by James I., and is governed by a Mayor, eleven Aldermen, and twelve Burgesses.

Carisbrook is a small village, half a mile from *Newport*, and was formerly the principal place of the Island: its situation is pleasant, but it is almost wholly decayed. Its Castle is familiar to every reader of English history, as having been the prison of Charles I. in the year 1647: and here the unsuccessful negotiation between the King and the Parliament was carried on. Since that period it has been suffered to fall to decay, and is now in some parts in a mournful state of dilapidation. It is a venerable ruin, of great picturesque beauty, and placed in a most commanding situation. It is supposed to have been a strong hold even before the Roman invasion.

Brading is a small market town, eight miles east of *Newport*, of great antiquity, but no trade; the ride to it affords a number of delightful views of the East part of the Island.

Newport, of great antiquity, but no trade; the ride to it affords a number of delightful views of the East part of the Island.

Ride is a very pleasant village, close to the sea; it is directly opposite to *Portsmouth*, and has a beautiful view of Spithead. It is divided into the Upper and Lower Towns, now of considerable extent: in its vicinity are a great number of country houses, which in the summer season are tenanted by respectable families, who pass the season amid all the enjoyments of pleasant walks and rides, beautiful views, salubrious air, and agreeable company. *Ride* is only seven miles from *Portsmouth*; between these places boats are continually plying.

West Cowes is pleasantly situated on the side of a hill, at the mouth of the *Medina*, commanding delightful views of Spithead, *Portsmouth*, Southampton River, and all the country opposite: its harbour is convenient and safe; it has great conveniences for sea-bathing. *East Cowes* is a small place opposite *West Cowes*, where the shipping business is generally transacted, and has a dock-yard where large ships are frequently built.

Newtown is situated on a bay, on the north-west coast of the island; it was originally called *Francheville*, but received its present name when rebuilt in the time of Richard II., after its destruction by the French. Vessels of 500 tons burthen can enter its harbour; but it is little frequented.

Yarmouth is a borough town, ten miles west-north-west from *Newport*, at the mouth of the *Yar* in *Freshwater Bay*. Its situation is very pleasant, lying opposite to *Lymington*, with which place there is a constant intercourse by passage-boats.

A trip completely round the island by water is a most agreeable excursion in summer. The back of the island, that is to say, its sea-ward front, presents some of the most magnificent cliff scenery imaginable. The prodigious rocks which bound and guard this coast can only be seen to advantage from the sea: they have an appearance of grandeur and sublimity of an awfully attractive character.

Shanklin Chine is a considerable natural curiosity, and is visited by most persons who go to the island. *Steep-hill* presents extensive and beautiful views; among others that of a large tract of land called *Under-cliff*, which has not its parallel: it derives its name from lying between the cliff and the sea-shore. The cliff extends some miles in length, and it is so regularly perpendicular as to give the idea of an immense rampart raised by art. *Chale Bay* is lined with a continued chain of tremendous rocks, which are frequently fatal to the mariner.

Freshwater Cliffs are of a chalky substance, and of prodigious altitude, rising to six hundred feet above the sea which washes their base. In summer they are the domicile of immense flights of birds, which take advantage of the fissures and clefts as nurseries of their young. They arrive in May, and leave in August.

The *Needles* are a range of sharp rocks, situated at the western extremity of the island: they rise to a great height above the water, and appear at a distance like the remains of so many siege-shattered towers. Passing them is called, in seamen's language, "going through the Needles."

Whether this lovely spot be considered a place of pleasing convalescence for the debilitated valetudinarian, a salubrious relaxation for the over-strained faculties of the student, a necessary relief from the harassing anxieties of the man of business, a complete change of scene for the exertion-spent energies of the professional practitioner, a calm retreat for the recluse, a lively rendezvous for the gay, an unparalleled series of interesting studies for the painter, or of natural

magnificence for the admirer of the works of creation,—certainly no spot of equal extent, so near the “busy haunts of men,” can be anywhere pointed out, uniting in itself so many natural advantages and artificial facilities as the ISLE OF WIGHT.

POPULATION OF THE ISLE OF WIGHT.

The last census reports the number of the inhabitants as follows:—

Males, 17,205; Females, 18,226; Total, 35,431.

REPRESENTATION OF THE ISLE OF WIGHT.

This is included in the county of Hants: it sends one member for the Island, and two members for the borough of Newport. Newtown (voters 33) and Yarmouth (voters 13) were disfranchised by the Reform Bill.

THE SCOTTISH MAIDEN.

In the account of HALIFAX GIBBET-LAW, given in page 445, allusion is made to an instrument of death called the MAIDEN.

The following account is from Mr. Pennant, to whom the reader is indebted for the account of the HALIFAX GIBBET. After having described that machine in the words already quoted, he proceeds to say, “I saw one of the same kind in a room under the Parliament House at Edinburgh, where it was introduced by the Regent Morton, who took the model of it as he passed through Halifax, and at length suffered by it himself.

“It is in the form of a Painter’s Easel, and about ten feet high. At four feet from the bottom is a cross bar, on which the felon laid his head, which was kept down by another placed above. In the inner edges of the frames are grooves; in these is placed a sharp axe, with a vast weight of lead, supported at the very summit with a peg; to that peg was fastened a cord, which the executioner cutting, the axe fell, and did its duty effectually, without suffering the unhappy criminal to undergo a repetition of the stroke, as had been the case in the common method by the headsman.

“If the sufferer had been condemned for stealing a horse or a cow, the string was tied to the beast, which, on being whipped, started away, pulled out the peg, and became the executioner.”

EVILS OF WAR TO LITERATURE.

ROSCOE AND GEORGE III.

AMONG the external causes that deaden the operations of intellect, and destroy the vital principle of exertion, few have been more effectual than a state of public insecurity, and the long continuance of desolating wars.

When the mind is agitated by apprehension, when the means of subsistence are precarious, when domestic attachments are endangered, and the duration of life itself uncertain, how is it possible to turn to those studies which require uninterrupted leisure, and perfect freedom, not only from the severer calamities of life, but from the usual interruptions of society?

The circumstances in which all Europe was placed during the middle ages, when, for a long course of time, one species of desolation was followed by another in quick succession, and the world was thinned in its numbers by famine, by pestilence, and by the sword; or debilitated and exhausted by oppression in every variety of form, exhibit too

certain a cause of the deep debasement of the human mind, and of the almost total relinquishment of liberal studies.

Even independent of the miseries occasioned by war, whether unsuccessful or successful, its long continuance is hostile and destructive to letters and to arts. The ferocious spirit which it excites is highly discordant with that disposition which consults not merely the being, but the well-being of the human race, and endeavours to communicate to them the highest pleasures of which their nature is capable.

In the arrogant estimation of brutal strength, wisdom and learning are effeminate and contemptible; and where those qualities are little esteemed, the attainment of them will no longer excite exertion. Even the interruption which takes place in the intercourse between different states, during the continuance of a war, is itself highly unfavourable to the progress of science and letters; as it prevents that free communication of discoveries and opinions between men of talents and genius, which excites a national and generous emulation, and has tended in a great degree to the improvement of mankind.

Thus then it appears, that a state of general tranquillity, and a government which admits of the free exertions of the mind, are indispensably necessary to intellectual improvement.

Such are the opinions of the great Roscoe, as stated by him in a Lecture, delivered at the opening of the Liverpool Royal Institution.

Let us add a Royal opinion, in some degree connected with these ideas:

M. de la Lande, the celebrated French Astronomer, when in England, being introduced to his Majesty George III., thanked him for the liberal patronage he had afforded to his favourite science, and received the following memorable answer: “Is it not far better than spending money for the purpose of *setting men to murder each other*?” This anecdote was recited by that eminent Astronomer himself.

STRENGTH OF MEMORY, AND KINDNESS, OF GEORGE III.

The remarkable strength of the faculty of Memory in his late Majesty George III. was so striking a characteristic of his mental powers, as to have been noticed by every one who came within the sphere of observing it. The following is an amiable and benevolent instance of its exercise.

When this Monarch was very young, his father,* then Prince of Wales, employed Goupy, an ingenious artist, to paint a picture. Prince George was then in some disgrace and imprisoned behind a chair, which being observed by the painter, he solicited his liberty. “Come out, George,” said his father, “Goupy has released you.”

Very many years after this event, the prince having ascended the throne, and Goupy being aged and very poor, the latter put himself in the way of his Majesty as he was passing through Kensington. “How d’ye do, Goupy?” said the King. “what have you to live on?”

“Little enough,” replied Goupy, “and as I once liberated your Majesty from confinement, I hope you will not let me go to prison.” Upon this his Majesty allowed him a pension for the remainder of his life, which proved to be very short.

* Prince Frederic, who died during his Father’s (George II.)

CAPTAIN COOK AND THE SHILLING.

THERE is not the slightest doubt as to the authenticity of the following remarkable incident. It shows —— the effects of little causes producing great consequences. The discoveries of the great English Circumnavigator were owing to a particularly-marked shilling!

The account was narrated by a gentleman to whose father young Cook was bound apprentice, and from whose service he ran away.

That gentleman was both merchant and shopkeeper at Staithes, a large fishing-town on the Yorkshire coast. Young Cook, who was a native of that part of England, served in the shop; some money had been missed from the till, and to detect the delinquent, a very curiously-marked shilling was mixed with the silver, which was accurately counted.

On examining the till shortly after, this peculiar shilling was missing, and Cook was taxed with having taken it out; this he instantly acknowledged, stating that its particular look had caught his eye, but affirmed at the same time that he had put another of his own in its place.

The money was accordingly counted over again, and found to agree exactly with his statement. Although the family was highly respectable, and therefore capable of advancing him in his future prospects, and also much attached to him, and very kind, yet the high spirit of the boy could not brook remaining in a situation where he had been suspected: he therefore ran away, and having no other resource, entered as a cabin-boy in a collier.

The remainder of his BIOGRAPHY forms one of the most important chapters in the HISTORY OF THE WORLD.

STABILITY OF THE MAGNETIC NEEDLE IN JAMAICA.

A VERY remarkable circumstance in the history and theory of the compass is noticed as occurring in the undisturbed stability of the magnetic meridian in the Island of Jamaica. Ever since the year 1660, the compass has never varied in that island.

Of the grants of land made at that period, maps were laid down on the then magnetic meridian, and its direction remains the same to this day. Since the original grants, new maps on new scales have been constructed, and all of them invariably agree with the earliest ones in the direction of the needle, which is about 6 degrees east.

If the boundary lines passed through a forest, some of the trees of which were marked, such of the marked trees as are still standing, are found to be coincident with the present Meridian. The districts were originally laid out by the Cardinal Points, and when examined now by compass, they are found to be still the same.

Such remarkable facts, so contrary to general experience, discover to us how little is really known of the science of Magnetism. And as so much depends on a complete knowledge of the principles of the magnetic variation, this non-variation is submitted to the consideration of every friend of useful science.

THE EARLY SPREAD OF CHRISTIANITY AND MAHOMMEDANISM CONTRASTED.

In numerous instances, short-sighted sceptics have objected to the divine origin of Christianity, by referring

to the success and spread of Mahommedanism as rivalling the true faith. We intreat the student to consider, firstly, that the success of the False Prophet is foretold in the same Sacred Volume which brings life and immortality to light; Divine inspiration only could have prophesied this event; secondly, the means of success, "The Koran or the sword, believe or die," places the spread of this false religion on grounds so different from that of the Gospel of Peace, that the most inattentive cannot but discriminate the difference. A few remarks, therefore, contrasting the modes of propagating the true and the false religion will not be displaced in a work devoted to the advancement of knowledge and to the support of the interests of truth.

The extensive spread of the Christian religion, during the lives of its first promulgators, is an object every way deserving investigation. They were armed—not with the exterminating sword, nor with enactments of national authority, but with the simple influence of persuasion only, and with the means of attracting public attention in the benevolent power of relieving their hearers from those maladies under which they suffered.

Their object was to convince the judgment, to direct the affections, to fix the conduct, to persuade men. They employed no terrors founded on penal sanctions: they had no authority to persecute or to imprison or to destroy: they demanded no tribute: they waged no war.

Directly contrary to this benignant religion was that of Mahomet, which supplanted it in many wide spread regions, at the distance of about six hundred years. This new persuasion affected no pity, no management for the lives or properties of mankind. It abhorred idols, and it destroyed idolaters; it demanded submission at the point of the sword; it enforced tribute from those whom it spared; it subjugated their persons; it occupied their country; it appropriated their possessions; and if softened, it was by bribes and presents, by spoils and gratifications of its cupidity.

The political consequence of spreading this implacable religion must needs be surprising. The rumour of opinions embraced by a few exiles, and circulating within a desert, excited no alarm among distant potentates: but their professors suddenly acquiring strength, and spreading desolation all around, no state was secure from insult; no throne could ensure its stability.

The tribes of Arabia, almost banished as it were from among men, became the scourge of the most powerful sovereigns of the most civilized nations who by misfortune were their neighbours; and as the dominion of these insurgents extended itself, their rapine and violence fastened on countries, which at first considered mere distance of place as barrier sufficient to ensure absolute safety.

The consequences continue to this day: no small part of the earth obeys the delusions of Mahomedanism; performs devotions in the name of the Prophet, and addresses him as Mediator with the Almighty. From few of the countries on which they had seized has the profession of Islam been expelled. It holds in subjection the fairest portions of the globe; the most fertile, the most luxuriant; the many-harvested banks of the Ganges acknowledge its sway; the splendours of the crescent pollute Europe; Africa yields almost undivided obedience; and only the vast surges of the dreaded Atlantic have bounded the still more overwhelming storm of conquest attendant on the sword of the Arab Prophet, and his infuriated disciples.

As politicians, then, the history of the spread of Mahomedan power possesses an importance amply sufficient to justify our attention. While as men (for, in order to judge im-

partially, we suspend for an instant our predilection in favour of Christianity) we enjoy a satisfaction in discriminating between the pretensions of rival religions, one of which invites, the other insists; one seeks to persuade by intreaty, the other enforces its injunctions by terror; one solicits, the other destroys; one offers life, the other brings out death: one heals, soothes, mitigates, the other allows no alternative but subjection, tribute, or war.

We are for peace: we are disciples of the Prince of Peace; we rejoice in the propagation of peace; could our opinion prevail, never should universal peace be interrupted. We cannot, therefore, become good Mahommedans. We cannot sanction rapine under the specious name of religion. Invasion of the territories of others is our detestation: but invasion for the purposes of conversion is our unspeakable abhorrence. In thus branding the religion of Mahomed, are we guilty of injustice towards it?

Such were the principles and practice of the people whose enthusiasm, supported by the principle of dominion established in heavenly predestination, led them to the most distant climes in search of conquest, sovereignty, and settlement. If they fell in combat, they were deemed happy in the merit of martyrdom for the true faith; and their friends, who survived them, admitted not the shadow of a doubt to flit across their minds, as to the reality of that happiness, that paradisaical happiness, into which they fully believed that they immediately entered.

The sensual gratifications of life were less than nothing in comparison with those that exulted the believing and obedient warrior in the bower of the Prophet. He exchanged the feebleness of humanity for the inconceivable invigoration of the blessed; the vicissitudes of time and life, for the perpetuity of angelic felicity; the brevity of mortality, for the eternity of Deity itself.

Thus certain of rewards—in conquest, if they overcame,—in celestial glory, if they fell, they held their own lives cheap, even to indifference; and consequently they were masters of the lives of others. They seduced associates by offers the most attractive; they repaid their confidence by an earnest which included whatever could be desired by avarice in this world; and they relied on the world to come for whatever could satisfy a perverse imagination, or persuade a wayward and perverted fancy into acquiescence.

Much of their success, however, must be attributed to the abilities and prowess of the chiefs who commanded the swarms that fought under the shadow of the sacred banner. These were, undubtely, called into action by circumstances: but they availed themselves of those circumstances with no common dexterity; and to deny them this merit would be no less detraction, than to doubt the keenness of their falchions, or the vigour of those arms by which they were wielded.

Intrepid, blood-thirsty, insensible, they were not men but enthusiasts; and strangely they mingled the external rites of devotion, professedly directed towards God, with a cruelty peculiarly their own, conciliated by neither age nor sex, nor moderated by sentiments of sympathy or compassion.

When blood and slaughter, with the destruction of those lives HE has given, shall be deemed proofs—valid proofs—of a commission from the Almighty, when tribute stipulated to be paid annually in slaves, when cities razed from their foundations, and bread obtained from corn-mills turned by a current of human blood, shall be allowed to demonstrate a commission from God, then, and not till then, shall we admit the Mahomedan creed to compete with the benevolent principles of Christianity.

A HINT TO THE POTTERIES.

If, instead of the unmeaning subjects which so generally cover the earthenware in present use, there was a wise saying, or an immutable truth, on every plate and teacup and saucer, what a fund of useful wisdom might be introduced into every family! What admirable topics for conversation would thus be presented, and what valuable and early associations would be formed. The delineation of moral and religious emblems, with appropriate mottoes,—or historic facts from Scripture or from national history, or scientific subjects, would be highly improving.

Those who recollect that the amiable and learned Dr. Doddridge was taught the History of the New Testament from the Dutch tunes in his mother's chimney corner, will not ridicule this idea.

THE SOLDIER'S RETURN.

Written in Scotland, by a Young Lady, at Twelve Years of Age.

SCENE, A MOOR.—TIME, MIDNIGHT.

Soldier—Whose taper lends its dying gleam
Where chilling ice-drifts blow?
And who is she by Leven's stream
Whose footsteps print the snow?

Jessie—Ere sin' the dewfall of the night
This glimmering lamp I bore,
To seek a father bold and blind,
And guide him o'er the moor.

Soldier—A kirk-yard turf, a nameless stane,
Maun soon thy father hide;
Then leave him, lassie, and be mine,
A wealthy sodger's bride.

If never meant to cherish luv
That smile would no be thine,
Those eyes would be less bright and clear
If never meant to shine.

Jessie—O never in my father's cot
Hath sorrow dimm'd my e'e,
Nor ever shall thy proffer'd luv
Allure a smile frae me.

My tears I shed in yon kirk-yard,
Beside my mither's stane;
My smiles I keep to cheer our board,
And soothe a father's pain.

Soldier—Yet turn thee, lassie, turn and smile,
Thy waefu' task resign:
His prop may be thy husband's luv,
But thine maun a' be mine.

Jessie—Cauld is my husband Arthur's luv:
For ten lang years are gane,
Sin' pierced wi' mony a ghastly wound
He fell amang the slain.

Soldier—If wedded luv, thy husband dead,
Sic deep regret can claim,
Thy kindest smiles maun cheer the heart
Which feels a living flame.

Jessie—Far mair, kind sodger, mair than a',
 That boasted wealth I'd gi'e,
 For one ray of the morning light
 To cheer my father's e'e.
 Far mair I'd gi'e to kiss the turf,
 That laps my husband's head,
 Far mair I'd gi'e to bless the hand
 That smooth'd his dying bed.

Soldier—And can a husband lost sae lang
 To JESSIE still be dear?
 Then lift again thy weeping e'e,
 Behold thy ARTHUR here!

Jessie—O mock an e'e unwet wi' tears,
 A blither heart beguile,
 That raven's voice can no be his,
 Nor his that chilling smile.
 It could na' be that roughly grasp,
 His hand wad gi' to mine,
 It could na' be in ARTHUR's e'e
 So little joy wad shine.

Soldier—Unseen maun be the tender joy
 Which melts a sodger's eyes,
 The gentle grasp, the soft caress
 A sodger's hand denies.
 Yet still the warmth these hands refuse,
 In ARTHUR's bosom dwells,
 And still his deeds shall prove the bliss
 His e'e no longer tells.

Around that chill'd and breaking heart
 Life's safest bands shall twine;
 Thou liv'st to soothe a father's woes,
 I live to banish thine!

LAVATER AND THE POOR WIDOW.

THE benevolent Lavater, the countryman of Tell, fell a martyr to the Cruelty of War, at the loss of that Independence under French usurpation which the former founded.

Lavater was a pious and conscientious minister of the Gospel, but is better known as the author of a most ingenious, although very fanciful, system of Physiognomy.

He was wounded by the bayonet of a ferocious French soldier, in the storming of Zurich by Massena, in 1790, and died in consequence of that wound; at his funeral, so great was the esteem for his memory, that all the French officers then in the place requested permission to follow his remains to the grave.

The following is an extract from his private diary:

Jan. 2, 1769:—"Awoke at six o'clock—remembered that I am mortal—gave thanks to God, and read the 5th, 6th, and 7th chapters of St. Matthew. What a treasure of pure morality! I now went to my avocations, and continued them until noon.

" My wife asked me during dinner what sentiment I had chosen for the day. ' Give to him that asketh thee, and from him that would borrow turn not thou away.' —' Pray how is this to be understood?' said she:—' Literally.'

" Just as I arose from dinner a widow desired to speak with me. ' You will excuse me, dear Sir (said she), I must pay my rent, and I am six dollars short. I have been ill a whole month, and could scarcely keep my poor children from starving. I have laid by every penny—but I am six

dollars short, and must have them to-day, or to-morrow—pray hear me, dear Sir.'

" Here she presented me a book engraved with silver. ' My late husband (said she) gave it me when we were betrothed, I part with it with reluctance, and know not when I can redeem it.' I put my hand into my pocket and touched my money: it was about two dollars and a half. ' It won't do (said I to myself), and if it would I shall want it.'

" My wife entered the room. Conscience whispered ' Give to him who asketh.' My wife whispered, ' She is a pious, honest woman.' ' I have but two dollars (said I), and she wants six.' The widow was going—my wife bade her stop in the passage. ' Don't you know (said she to me in private) there are six dollars in your biseau?' I pressed her to my bosom, and dropped a tear. I gave the money to the woman. ' O how shall I thank you (said she), I have nothing but this poor book.' —' Keep your book and your money, and thank God, and not me. Indeed I do not deserve it, because I hesitated.—Go, in the name of God, and say not one word more.'

It is said that the author of the "*Sentimental Journey*," when himself was in easy circumstances, permitted his aged mother to pine in unnoticed and unassisted penury. Can all the pages of that writer equal the practical benevolence of the simple-hearted amiable subject of the anecdote above-mentioned?

POPULATION OF YORKSHIRE. (See p. 436.)

The following shows the Return of some of the principal places:—

	Males.	Females.	Total.
Hunsley, Beacon Division.....	10,900 ..	12,212 ..	23,121
York, City	12,083 ..	14,371 ..	26,454
City of York, Ainstey ..	4,427 ..	4,457 ..	8,908
Kingston-upon-Hull, Town, and County of the Town of	16,220 ..	20,073 ..	36,293
Agincourt, Wapentake ..	92,720 ..	91,587 ..	184,307
Barkstone Ash, Wa- pentake	11,737 ..	12,235 ..	23,972
Clare, Wapentake ..	21,161 ..	20,925 ..	42,086
Morpeth, Wapentake ..	114,933 ..	117,321 ..	232,255
Osgodby, Wapentake ..	16,330 ..	16,701 ..	33,031
Skyrack, Wapentake ..	21,615 ..	21,303 ..	42,918
Staverdale and Lawton, Wapentake	31,859 ..	35,460 ..	70,319
Staincross, Wapentake ..	19,932 ..	18,702 ..	38,634
Leeds, Town and Li- berty of	60,473 ..	62,920 ..	123,393

MEMOIR OF JAMES WATE, Esq.
With a PORTRAIT.

ONE of those very few characters to which History devotes an entire page, thus speaks, in general terms, of the Steam Engine:—" It fought the battles of Europe, and now enables us to pay the interest of our debt, and to maintain the arduous struggle in which we are still engaged with the skill and capital of countries unoppressed with taxation. But these are poor and narrow views of its importance. It has increased indefinitely the mass of human comforts and enjoyments—has armed the feeble hand of man with a power to which no limits can be assigned, and completed the dominion of mind over the most refractory qualities of matter.



JAMES WATT, CIVIL ENGINEER, 1736—1819.

"The blessing is not only universal but unbounded; and the fabled inventors of the plough and the loom, who were deified by the erring gratitude of their rude contemporaries, conferred less important benefits on mankind than the INVENTOR OF THE STEAM ENGINE."

The same writer alluding more particularly to the improvements in this machine invented by the subject of our present memoir, thus enumerates their effects. "It was by his invention that its action was so regulated as to make it capable of being applied to the finest and most delicate manufactures, and its power so increased as to set weight and solidity at defiance—that it became a thing stupendous alike for its force and flexibility—for the prodigious power it can exert, and for the care, precision, and dexterity, with which this power can be varied, distributed, and applied.

"The trunk of an Elephant, that can pick up a pin or rend an oak, is nothing to it. It can engrave a seal, and crush masses of obdurate metal like wax—draw out, without breaking, a thread as fine as gossamer, and lift a ship of war like a bubble in the air—it can embroider muslin and forge anchors,—cut steel into ribbons, and impel loaded vessels against the fury of the waves."

The application of Mr. Watt's mind to the Steam Engine gave it almost a new form: in fact, almost everything particularly valuable in our present engines (except the principle of obtaining power by the generation and condensation of Steam) may be regarded as his invention, or as resulting from some of his discoveries.

James Watt was born at Greenock, in the year 1736. His father was a respectable merchant and magistrate of that town: his son James received a good education in the public schools. He had a delicate constitution, and soon displayed the same love of seclusion and privacy which was so noticeable in after-life.

Even before he left school, he was much attached to mechanics, and appears to have selected his own profession according to the bent of his genius. At eighteen he removed to London, and there received instruction for about a twelvemonth from an eminent Mathematical Instrument-maker.

Ill health compelled his return to Greenock; and he pursued his studies and occupations without further instruction.

Yet his progress was extremely rapid, and in his twenty-first year, his reputation was so well established and appreciated, that he was appointed Mathematical Instrument-maker to the University of Glasgow. He had apartments in the College, until his marriage in 1764, when he removed into the town of Glasgow.

Until the year 1774, he acted as Civil Engineer, and made several plans for Canals and Harbours, some of which were afterwards carried into effect. During this period his attention was unremittingly devoted to the improvement of the Steam Engine, and many of his discoveries were then made. In that year, in order to carry his improvements into effect, he united in partnership with Mr. Boulton, the great manufacturer of Birmingham.

It was a most fortuitous circumstance for Mr. Watt, and for the world, that he found out and associated himself with such a person as the individual above-named, whereby the success of his schemes was ensured: he was the very man calculated to give full effect to the ingenious inventions of the projector, and nothing but gross injustice would conceal, or blind ignorance pass over in silence, the ample assistance which he gave in bringing the infant projects of his ingenious partner into full and vigorous existence.

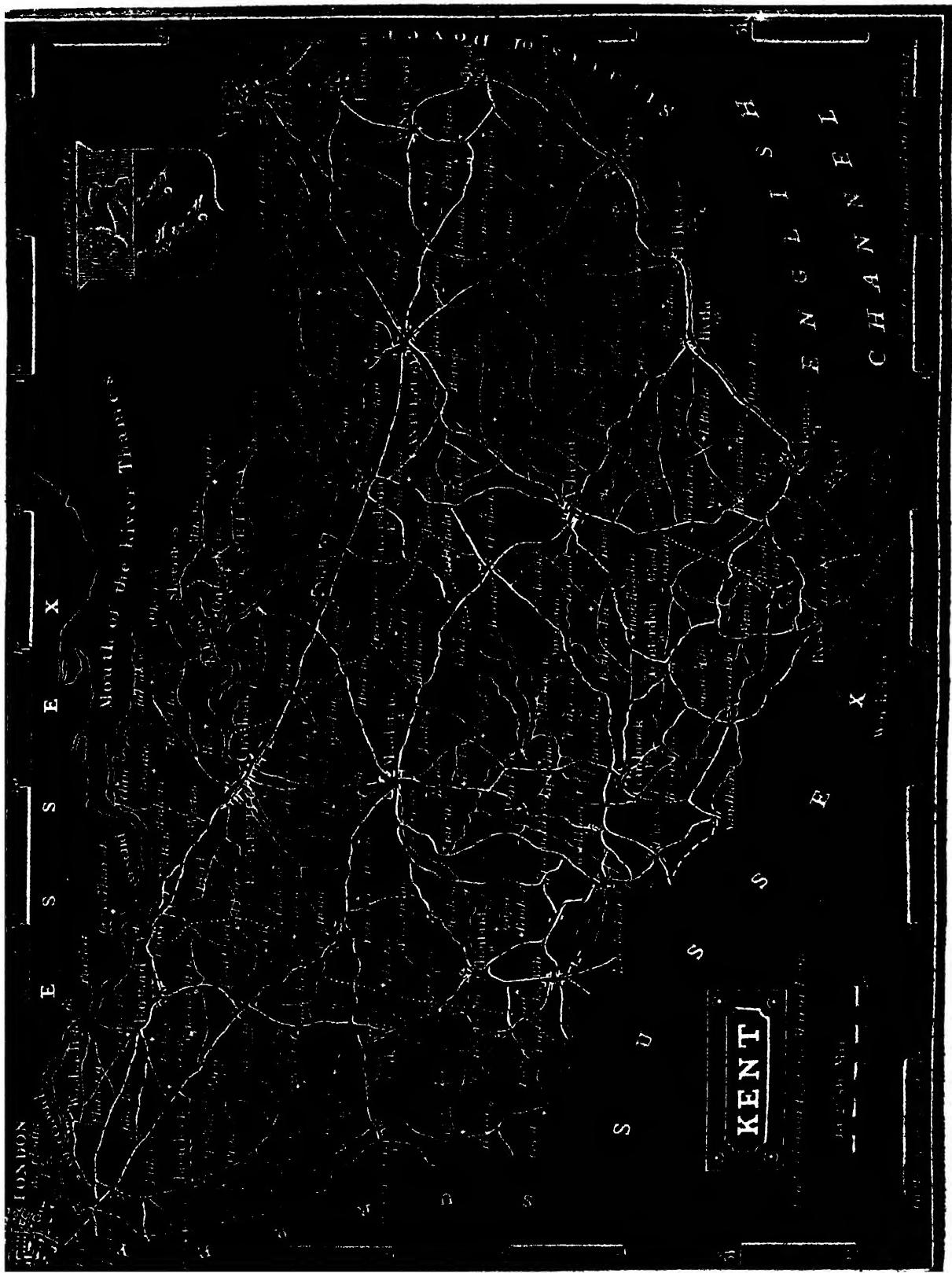
Of an enterprising spirit, in love with great and difficult undertakings, with money at command, a person of singularly good address, and of great influence, already known as a man of strict integrity, and as successful in his affairs, with a large concern already well established, which had given him extensive connexions; one, in short, whose every qualification was adapted to ensure success to any scheme in which success was attainable.

He was so far advanced in commercial prosperity, so eminent in his station in life, that he was in the habit of appearing at the court of his Sovereign, and could have ensured the countenance and patronage of Royalty and of the Government, had such factitious aid been necessary. But whatever the Steam Engine can do for Courts, Courts can do nothing for the Steam Engine: it requires no help, it can go alone.

Shortly after his connexion with Mr. Watt he was accosted by his Majesty George III.,* in his usual familiar way, and asked what project he had then on foot. "Sire," replied Mr. Boulton, "I am manufacturing an article of which Kings are extremely fond." "Aye, aye,—what is that?—what is that?" demanded the King. "Power, Sire, please your Majesty." "Power! Mr. Boulton: we like power, that's true; but what do you mean?" "The power of Steam to move machines, Sire." He then explained his design to the great gratification of his Majesty, who expressed himself as highly pleased, laughed, and encouraged him to persevere.

But our limits will not allow us to give the remainder of this biographical sketch, which demands more space than has been allotted for it: In order, therefore, that it may not be abridged beyond what is useful, we must defer the account of his political representations to a succeeding opportunity.

* The knowledge of the Mechanical Arts possessed by that Monarch was of the first order, and could only be equalled by his love for the musical sciences.



KENT.

GENERAL TOPOGRAPHICAL DESCRIPTION.

This is a maritime County, situated on the South-east extremity of England, one side of it opposite to France: it is of an irregular quadrilateral figure.

It is bounded on the North by the Thames and the German Ocean; on the South by Sussex; on the East by the British Channel, and on the West by Surrey.

In length it is upwards of sixty miles; in medium breadth about twenty-five or twenty six miles and in circumference upwards of one hundred and seventy miles.

It contains two Cities, Canterbury and Rochester; thirty-nine Market Towns; four hundred and thirteen Parishes; and five Lathes divided into sixty-three hundreds: extending over about fourteen hundred square miles, or nearly nine hundred thousand acres.

This County is included in the Home Circuit, is in the Province of Canterbury, and in the Dioceses of Canterbury and Rochester.

NAME.

This County has not varied in its appellation from the earliest period of record. Caesar, Strabo, Diodorus Siculus, Ptolemy, and all ancient writers, call it CANTUM, and its inhabitants CANTII: and the Saxons, according to Nennius, named it CANT-GUAR-LANT, that is, the "Country of the Kentish people."

The derivation of this ancient name, however, has perplexed all commentators, and various have been the conjectures as to the origin of this appellation. The word CANT signifies in the Ancient British, *an open down*; and as this County abounds in such, this is the most probable derivation, as being descriptive of the general aspect of the County; for certainly all the appellatives of our Cambrian forefathers were intended to describe the situations or places to which they were appropriated.

CLIMATE, SOIL, AND AGRICULTURE.

The proximity of the German Ocean and the English Channel renders this County liable to cold Sea-winds, which are bracing and salutary to the health of the inhabitants, but detrimental to the vegetable kingdom, particularly when in a tender state. The South-west part of the County is more enclosed than any other, and being also protected by an extensive range of hills, is the warmest part of this district.

The subsoil of the Isle of Thanet is a dry and hard chalk rock, and is covered with a loose chalky mould: the tops of the ridges are about sixty feet above the level of the sea; there is a mixture of flints in the upper soil, and it is naturally very poor. The vales between the ridges, and the flat lands on the hills, have a dry loamy soil, from one to three feet deep, of much better quality.

The soil varies much, and part of this island has a good mould; some parts show a deep, rich, sandy loam, dry enough to be ploughed flat without water furrows. The soil of the Marshes is a stiff clay.

The open district between Canterbury, Dover, and Deal, is of various soils, Chalk, Loam, strong Cledge (a stiff tenacious earth with Flints), Hazel Mould (a light soil on a clay bottom), and Stiff Clay.

The land near Faversham, Sandwich, and Deal, is flat and rich, and lies nearly on a level, is extremely fertile, and under excellent management.

The Upland Districts of West Kent comprise a great variety of soils; this part is more enclosed than the eastern division, and produces more timber and underwood.

The Weald of Kent was in ancient times an immense wood, inhabited only by wild animals, and belonged wholly to the King. It gradually became peopled and interspersed with villages and towns, and for the most part cleared of wood; but some woodlands are still in their original state.

Romney Marsh is a spacious level of exceedingly good rich marsh land, at the Southern extremity of Kent; it comprises about forty thousand acres: the quantity of sheep bred and fed here exceeds any district of the like extent in the kingdom.

The Marsh is defended from the encroaches of the Sea by an immense Wall or Dyke of earth, protected by fagots-wood, strongly fastened down to prevent the sea from washing away the mould: it is upwards of three miles in extent, and its preservation costs, including its three sluices, an annual outlay of about four thousand pounds; this is levied by a scot over the whole Level.

The soil nearly throughout the whole of this spacious Level is the sediment of the Sea: the grass it produces is of a fattening quality, equal if not superior to any other in the kingdom. The principal breed of sheep, kept in the different parts of Kent, are mostly of the Romney Marsh Breed, with carcasses and bones large, and the wool long and heavy: they are called by the Smithfield Salesmen "true Kents."

The Corn produced in this County is of the finest description, and its proximity to the Metropolis, with the cheapness and certainty of transport, being on a tide-water the entire distance, confer advantages of inappreciable importance.

HOP GROUNDS.

The plantations of Hops are principally in the vicinity of Canterbury and Maidstone, those grown near the first are of a very rich quality, and, if well managed, are of a good colour: they are highly esteemed by the London Brewers. The average produce of the Hop lands in the vicinity of Canterbury is about seven hundred weight per acre; but an article of agricultural produce yielding a more uncertain crop cannot be named, apples excepted.

The best of the Hop plantations are those which have a good, deep, and rich loamy surface, with a deep subsoil of loamy brick earth; this kind of land forms the principal part of the plantations of East Kent.

The quality of the Maidstone Hops is reckoned inferior to those of Canterbury and East Kent.

ORCHARDS, &c.

In the neighbourhood of Maidstone there are a great number of small Orchards, planted with fruit of different kinds, for which the rocky soil of that neighbourhood seems particularly adapted: and the easy water-carriage to that all-devouring market, London, renders the growth of fruit a most profitable calling.

It is a very common practice to plant eight hundred hop-hills, two hundred filberts, and forty apple and cherry trees, per acre. The constant culture of the Hops, with the shelter they afford to the young trees, causes them to grow with great luxuriance. The Hops stand about twelve years, and the filberts about thirty years, by which time the apples and cherries have grown so large as to require the whole land.

Fruit Orchards are considered as the most valuable estates: tithe is very rarely paid in kind, but in lieu of it a composition of two shillings on the pound on the price of the fruit.

MANUFACTURES, &c.

There are not many Manufactures in Kent: at Canter-

bury there are some Silk Works, but they are now giving way to Cotton : at Dover, Maidstone, and some other places, vast quantities of paper are made. At Stonar, near Sandwich, and in the Isle of Grain, are Salt-works ; at Whitstable and Deptford are large Copperas-works : Gunpowder is made at Dartford and Faversham ; at Crayford there are large works for printing cottons and bleaching linens.

There were formerly some Mines of Iron worked in this County, and there is plenty of iron stone ; but the dearness and scarcity of fuel occasioned by exhausting the woods, and the vast improvements introduced in smelting the ore by Coal Coke in the Coal and Iron districts, have effectually superseded this branch of industry in Kent.

RIVERS AND CANALS.

The principal Rivers of this County are, the *Thames*, the *Medway*, the *Greater* and the *Lesser Stour*, the *Rother*, the *Darent*, the *Cray*, and the *Ravensbourne*.

The *Thames*, the *Tamesis* of Caesar, enters Kent from Middlesex, passes *Deptford* and *Greenwich* ; flows in a fine sweep to *Woolwich*, between *Erith* and *Long Reach* receiving the *Cray* and the *Darent*, and with various windings or reaches, flows between *Tilbury Fort* and *Gravesend* : it then passes through the Channel called the *Hope*, still increasing in width, and then, opening due East, passes the *Isle of Grain* and the *Isle of Sheppy*, and flows into the German Ocean at the Nore, immediately after receiving the waters of the *Medway*. The *Thames* on its leaving Middlesex, forms the division between Essex and Kent, except a very small portion of the latter which is situated on the northern shore of that river.

The *Medway* was called *Vaga* by the Britons : it is formed by four streams, only one of which rises in this County, the springs of two being in Sussex, and the fourth in Surrey. A little above Tunbridge it divides into two channels, and unites again two miles below that town : the *Bewle* and *Theyse* rivulets join it, and it passes *Maidstone*, *Rochester*, *Chatham*, *Upnor Castle*, and *Gillingham Fort*, then joins the *Thames* between the *Isles of Grain* and *Sheppy*. This river was first made navigable to *Tunbridge* about the middle of the last century.

On the *Medway*, and in the several creeks and waters belonging to it, there is a valuable oyster fishery, within the jurisdiction of the Corporation of Rochester : the Mayor and Citizens hold an Annual Court, called the Admiralty Court, for regulating the fishery, and preventing abuses in it.

The *Greater Stour* passes *Ashford*, *Wye*, and *Canterbury* ; proceeding through the *Isle of Thanet*, it is joined by the *Lesser Stour*, and separates that island from the rest of the County ; passing by *Richborough* and *Sandwich*, it falls into the British Channel at *Pepperne*.

The *Lesser Stour* passes along the west of *Barham Downs*, and flows into the *Greater Stour*, about a mile beyond *Stour-mouth*.

The *Rother* rises at *Gravel Hill*, in the parish of *Rotherfield*, in Sussex : it runs into *Rye Harbour*.

The *Darent* rises near *Westerham*, and proceeds to *Dartford*, where it takes the name of *Dartford Creek*, and enters the *Thames* at *Long Reach*, having first received the waters of the *Cray* : it is navigable for small craft from *Dartford* to the *Thames*.

The *Cray* rises at *Newell*, and gives name to *St. Mary's Cray*, *Paul's Cray*, *Foot's Cray*, *North Cray*, and *Crayford*. Passing through *Crayford Marshes* it falls into *Dartford Creek*.

The *Ravensbourne* rises on *Keston Downs*, near an ancient Roman camp, and passing *Hayes*, *Bromley*, *Lewis-*

ham, and *Lee*, becomes navigable at *Deptford* (where it takes the name of *Deptford Creek*), and falls into the *Thames*, between that place and *Greenwich*.

The *Thames* and *Medway Canal* joins those two rivers, so as to save a circuitous detour in passing from one to the other.

A Military Canal commences at *Hythe*, and proceeds to the extremity of *Appledore*.

CITIES AND TOWNS.

This division of the Topography of Kent would be so extensive if only a mere shadow of justice were done, that our limits would not suffice even if appropriated solely to this subject : a very brief notice, therefore, of the principal places must suffice.

CANTERBURY.

This City was the ancient capital of Kent : it is the See of an Archbishop, who is *Primate of all England*. Its foundation is referred to the most remote antiquity, as it was certainly a British station before the arrival of the Romans. Druidical remains have frequently been found here. In the Itinerary of Antoninus it is noticed by its ancient name, *Durovernum*. During the time of the Saxons it was called *Cant-wara-byrg*, or the *Kentishmen's City* : and Bede mentions it as being the "Chief place in all the dominions of King Ethelbert." It suffered severely from the invasions of the Danes.

It is situated in a pleasant valley, between hills of a moderate height and easy ascent, with many fine springs arising from them. The *Stour* runs through it, forming islands of various sizes, on one of which the western part of the City stands. It first sent Members to Parliament in the 23rd of Edward I. The Cathedral is one of the most splendid and venerable piles of ancient architecture in the kingdom.

MAIDSTONE.

Maidstone, the County Town of Kent, is advantageously situated on the Eastern bank of the *Medway*, whence it derives its name : in the Domesday Book it is written *Meddstune*. It is pleasant, large, and populous. The chief source of the wealth of this town arises from the culture of Hops. A manufactory of linen thread was introduced from Flanders in the reign of Elizabeth, and it still continues.

This place derives great advantage from the navigation of the *Medway*, whereby it is directly connected with London. There are many large Corn Mills here, the flour of which is shipped direct for the Metropolis.

ROCHESTER AND STROUD.

The City of *Rochester* is supposed to have been founded by the Romans, and innumerable Roman bricks are found in the ancient ramparts. Henry II. gave them a Guild-mercantile, and many other valuable privileges. It is strongly fortified on the South side ; and its ramparts, in conjunction with *Chatham Lines*, are considered as a regular series of fortified posts, commanding the River *Thames*, and extending from *Gillingham Reach* to the right bank of the *Medway*, above *Rochester Bridge*.

Stroud is so close to *Rochester* as to be considered its suburb : it consists chiefly of one narrow street. Its inhabitants are mostly supported by maritime occupations, and by the fisheries on the *Medway*, of which that of oysters is the principal.

CHATHAM AND GILLINGHAM.

Chatham is a large and populous, but irregularly-built town, adjoining to the East side of *Rochester*, and extending along the *Medway* up *Chatham-hill*. It derives much

of its prosperity from its Dock-yard and Arsenal, which are of great extent and importance, and are defended by strong fortifications. They were first formed in the time of Elizabeth, and gradually increased to their present great extent.

The village of *Gillingham*, two miles North-east of *Chatham*, is principally inhabited by persons belonging to the Dock-yard and other Government establishments. Many large ships have been built in this Yard, and the Medway always presents the magnificent spectacle of numerous floating castles laid up in ordinary.

SHEERNESS.

The Ville of *Sheerness* is the chief place in the *Isle of Sheepy*: it has a Royal Dock-yard for the building and repairing of King's Ships. The principal historical event connected with this town is the successful attack made by the Dutch in 1668, when they landed a number of men, took possession of the fort, not then finished, and sailed up the Medway: destroyed the shipping, and fell down the river again without molestation. This bold attempt caused the immediate construction of a regular fortification, which has at different times been greatly augmented and strengthened by numerous additional works.

DOVER, AND DOVER CASTLE.

Dover, or as it is now written, *Dover*, is a celebrated seaport town, situated in the Eastern part of the County. It is supposed to derive its name from *Dwyfyrha*, "wave-washed." The Saxons called it *Dorfa*, and Antoninus, in his *Itinerary*, *Dulbris*. *Dover* was the first of the Cinque Ports incorporated by Royal Charter; it was granted by Edward I. In the time of Edward III. it was enacted that "all merchants, travellers, and pilgrims, going to the Continent, should not go from any other place than *Dover*." The proximity to Calais, the nearest harbour of France, is highly in its favour in this point of view, as it still is the principal port of passage on the English coast.

The famous *Dover Castle* is situated on the summit of a stupendous cliff, on the North side of the Town and Harbour. The rock on which it is founded is a precipice, three hundred and twenty feet high, nearly perpendicular.

There can be little doubt that this was the site of one of the British forts previous to the landing of Julius Caesar; and the advantages accruing from its peculiar situation, both as a place of security, and for the purpose of a pharos, or lighthouse, were immediately recognised and adopted by the Romans.

MARGATE.

Margate is a fashionable watering-place, situated small bay on the northern coast of the *Isle of Thanet*, distant from London seventy-two miles: it is a favourite resort for sea-bathing, and ranks among the first of those lively towns on the coast which are annually frequented by the metropolitans in search either of health, of relaxation, or of both.

There was a Pier at *Margate* in early times, as Leland informs us that in the time of Henry VIII. it had "become sore decayed." In 1799 a Stone Pier was erected, which suffered so severely by a violent storm in 1808, that a new Pier was rendered requisite, which has been substantially built, and promises long to continue its useful services to the town.

* The *w* in Welsh words has exactly the power which its English name denotes, namely, a double *u*: the above word is therefore pronounced *Danwra* (the Welsh *f* is the English *v*), which shows the absurdity of the new mode of spelling the name of this town.

Considerable quantities of corn and flour are sent to London from *Margate*. On Hooper's Hill is a curious and extensive Horizontal Windmill, constructed by Captain Hooper, a native mechanical genius of the *Isle of Thanet*. A considerable timber trade is also carried on here with the Baltic Ports.

RAMSGATE.

Ramsgate, a hamlet belonging to the Parish of St. Lawrence, is also situated on the *Isle of Thanet*, about five miles from *Margate*, and commands very fine and open sea-views, including the cliffs on the coast of France. It is a very favourite watering-place, and possesses many advantages.

It was formerly an obscure fishing-village, but, in consequence of the want of a secure harbour, in case of stormy weather, for the shipping in the *Downs*, a magnificent Pier has been built of Portland and Purbeck stone and Granite, which ranks as one of the most splendid structures of this kind in the kingdom.

The Harbour contains an area of forty-six acres, and is kept clear of silt, or the mud deposited by the sea at each return of the tide, by means of a backwater, constructed by the celebrated Smeaton, which at certain periods of the tides, discharges the whole of the sea-water contained in the Inner Harbour, through sluices, whereby the required direction is given to the impetuous torrent, which carries the accumulated sand into the sea.

HERNE BAY.

A prosperous and pleasant village has been built on this Bay, which is situated on the coast, nearly at half-way between *Whitstable* and the *Reculver*, or the *Two Sisters*, a celebrated land-mark. The sea prospects are extremely pleasing; the bathing is very convenient; and from the accommodation afforded by a new Pier, or Jetty, with the advantage of steam-vessels plying to London, it is likely to rise into considerable importance.

In the channel near *Herne Bay* is a dangerous rock, called the *Pan Rock*, so named on account of the numerous fragments of Roman pottery, which the oyster-dredgers occasionally bring to light. It is supposed that they are relics of a cargo of Roman earthenware, wrecked here during the occupancy of this island by the Romans.

BROADSTAIRS.

This is a small, but very pleasant seaport, with a good pier, situated in the parish of St. Peter. It has of late years become a watering-place of some note: the sea-views from several points are fine, and the place on the whole possesses many attractions for those who prefer tranquillity to the gayety and bustle of crowded companies.

SANDWICH.

Sandwich is one of the Cinque Ports; it is situated on the *Stour*, about a mile and a half from the sea. It incorporated by Edward III., who vested the municipal government in a Mayor, Jurats, and Common Council.

It was formerly a place of much more consequence than at present, the harbour having been so choked up with the deposits of the sea, that only small vessels can enter. The town communicates with *Stonar* and the *Isle of Thanet* by a bridge which admits the passage of masted vessels.

There are plans now on foot for improving this harbour, so as to furnish a secure asylum for ships when driven by stress of weather from their anchors in the *Downs*.

Not far from *Sandwich* is a small river called the *Gestling*, which is very remarkable as having been anciently used for the execution of criminals by drowning.

In the reign of Edward III. a presentment was made before the judges at *Canterbury*, complaining that the Priors of Christ-church (Canterbury Cathedral) had arbitrarily turned the course of the *Gesling*, so that criminals could not be therein drowned; and, in another case, complaint was made that they had diverted so much water that the stream was not capable of carrying the dead bodies to the sea, so that they remained a nuisance to the neighbourhood.

DEAL, AND THE DOWNS.

Deal is situated on the sea coast, five miles from *Sandwich*. It is supposed that Julius Caesar landed here, having found the Britons posted on the shores of Dover so strongly as to defy his attempt at effecting a descent there, as he first intended. The town consists principally of three long streets, running parallel with the sea, with narrow and inconvenient connecting streets. The principal support of this town is derived from furnishing supplies to the numerous ships which anchor in the Downs.

The Downs. Immediately off *Deal* is the famous road for shipping, so well known under this name: here all the ships that sail from London, or are bound to that city, and pass the English Channel, generally anchor: many hundred sail are frequently seen here at one time.

During war time, this is the appointed station for the rendezvous of convoys, or fleets of merchant-vessels under the protection of King's ships, or of expeditions destined for foreign service; and when, having waited for a favourable wind, they obtain their wishes, the sight of such a vast moving city of vessels of all sizes, from the first-rate to the private merchantman, all getting under sail at one time, presents a scene of national magnificence, to which neither the painter with all his colours, nor the poet with all his exaggerations, can do even the semblance of justice.

HITHE.

Hithe or *Hythe* is one of the *Conque Ports*, and a place of great antiquity: it is supposed to owe its origin to the circumstance of the ancient ports of *Limne* and *West Hithe* having their harbours choked up with sand. It has now suffered the same fate itself, and scarcely deserves the name of a Port, as the sea-beach is now three quarters of a mile from the town.

Gravesend is a place of considerable importance, as it is the first port on the *Thames*; it is about twenty-four miles from *Greenwich*, and is situated on a declivity leading down to the *Thames*, opposite *Tilbury Fort*; a strong battery was erected here by Henry VIII. to repel any desultory attack from an enemy: at the same time he erected a block house at *Tilbury*, for a similar purpose, on the spot now occupied by *Tilbury Fort*.

Passage vessels, both sailing-boats and steamers, are constantly plying between London and this place, which adds much to its prosperity; and as most vessels bound on long voyages remain a few days here to take in their passengers, it presents a very lively scene. This town is admirably calculated for a short sojourn of persons fond of aquatic amusements, as ephemeral excursions may at all times be made to *Northfleet*, *Southfleet*, *Tilbury*, *Sherness*, *Southend*, the *Nore*, and even to *Margate*, *Ramsgate*, and *Dover*.

FAVERSHAM.

Faversham is situated on a navigable arm of the *Swale*, capable of floating vessels of a hundred tons at common tides. The town lays claim to great antiquity. The Saxon

Kings had a palace here, and a market and other privileges had been granted to the inhabitants long previous to the Conquest.

About the year 930, Athelstan held here his great Council of Parliament, Archbishops, Bishops, &c., to enact laws, and devise methods for the observance of them, an occurrence which shows the importance of the town at that period.

The only manufacture carried on here is that of gunpowder, the works for which are very extensive: they were private property until 1760, when they were purchased by Government; they are under a branch of the Ordnance Office established here. In 1781, the Corning Mill and Dusting House blew up, with seven thousand pounds of powder in them; by which sad accident all the workmen in the buildings lost their lives. The explosion was heard at twenty miles distance. The damage done to *Faversham* and the adjoining village of *Davington* was prodigious. Parliament granted a sum of money for the relief of the sufferers; and, under the provisions of an Act passed for the greater safety of the Powder Works, the stoves were removed into the Marsh, at a considerable distance below the town.

The Oyster Fishery of *Faversham* is of great importance, and forms one principal source of its trade. The oyster-dredgers are under the jurisdiction and protection of the Lord of the Manor; two Admiralty Courts are held annually: no person is admitted to the privilege unless he has served seven years to a Freeman, and is married.

We must, however, close this article. It would lead us far beyond our limits to take a detailed notice of every place worthy of attention; we can only mention by name *Beckenham*, *Berley*, *Birchington*, *Blackheath*, *Blackwall*, *Bromley*, *Cherening*, *Cliff*, *Cobham*, *Dartford*, *Deptford*, *Folkestone*, *Greenhithe*, *Greenwich*, with its magnificent Palace-Hospital, *Lewisham*, *Milton*, *Northfleet*, *Pegwell Bay*, *Rickborough*, *Sandgate Castle*, *Sittingbourne*, *Tunbridge Wells*, *Walmer*, *Whitstable*, and beyond all, *Woolwich*, with its Dock-yard and stupendous ROYAL ARSENAL.

POPULATION OF KENT.

By the Census of 1811, the total numbers amounted to 373,095.

By the Census of 1831, the numbers show an increase, in thirty years, of 106,069.

Males.	Females.	Total.
234,572	244,583	479,155

REPRESENTATION OF KENT.

County.	
East Kent (Canterbury)	2
West Kent (Maidstone)	2
Cities and Boroughs.	
East Kent—Canterbury	2
Dover	2
Hithe	1
Sandwich	2
West Kent—Clapham	1
Greenwich	2
Maidstone	2
Rochester	2

By the Reform Bill, *Hithe* lost one Representative; *New Romney* (8 voters) and *Queenborough* (131 voters) were wholly disfranchised.

The ANCIENT HISTORY OF KENT, and a more full account of the CINQUE PORTS, are deferred for want of room to the following Number.

ON AN EARLY SNOW-DROP.

"How are the dead raised? and with what body do they come?"

Tell me, thou Sage, how yonder flower
To life and light has burst its way;
When ten long months beneath the ground
Unsunned its embryo petals lay:—
Then will I teach thee how the SOUL.
From Death's long slumber can awake;
And to Eternal Life renew'd,
Its robe of heavenly beauty take.
While from the dust each circling year
The Snow-drop lifts its humble head,
Say, dare I doubt God's equal power
To call me from my lowly bed?

ANECDOCE OF THE ATHENIANS.

SOME sycophants of the Romans, then their masters, proposed to the Athenians, in a public assembly, to imitate their lords in the exhibition of shows of prize-fighters and gladiators in their theatres.

A citizen who was present, affected to applaud the flattering measure, and requested his fellow-citizens only first to accompany him, and help him to throw down the altar, which, in their better times, they had erected to MERCY.

That sensible people, although Heathens, felt immediately the grave rebuke, and were the only state in Greece that had courage to forbear imitating the barbarity of their conquerors.

Onglit not a British, particularly a Christian Legislator, to feel, that while he continues to legalize the enormities of SLAVERY, he is bound in consistency to abjure CHRISTIANITY?

THE VALUE OF TIME.

THE VALUE OF TIME may be calculated and enforced by the mean duration of HUMAN LIFE: in this country, at least in the Metropolis, about one half of the rational and accountable creation die under four years of age; and perhaps, were the calculation to be universally extended, upon the average, thirty years existence to each would equal, if not exceed, the life of the individual; from these thirty, ten years may be deducted for childhood, during which period few rational pleasures are cultivated; this reduces the possession of time to twenty years; and, if we allow one half to sleep and sickness, we shall then have ten years left for the promotion of intellectual improvement and general happiness.

Is this the average portion of active existence allowed to Man? And is this the Being that is complaining of the tediousness of life, and the slow flight of time? that is continually seeking some new diversion, some fashionable amusement to consume his TIME? and, when his TIME is consumed, bitterly complaining of the BREVITY OF LIFE? yet very rarely reflecting on its UNCERTAINTY! Alas! for

the inconsistency of my fellow-creatures! Alas for my own!

The fact affords us this important lesson, which cannot be expressed with more point than the Wise Man's inference from the same premises—" Whatsoever thine hand findeth to do, do it with thy might."

It suggests the necessity of using

1. *Diligence in acquiring Useful Knowledge.* Have you yet a few years before you commence the auxiliaries of life on your own account? How are you improving their fleeting precious moments? Are you wasting any of them?

2. *Diligence in Business.* Are you the possessor of only ten years of life, and those perhaps half spent, and do you stand idling in the market place, the very centre of activity? But little need be said here, an idler is universally despised.

3. *Economy of Time.* Are you the possessor of only ten years' time, it may be, nearly exhausted, and are you seeking expedients to kill time? Alas! go on with your reduction, and from these ten years deduct those lost by negligence, or wasted in idleness, or murdered by vice, and what is the final result?

4. This reflection suggests *Energy in Benevolence.* Look around on your fellow-men; you mean to do a great deal of good, but you are hesitating—considering—calculating, what you shall do; and while you are thus hesitating, the poor and distressed are starving—sickening—dying!—dying in ignorance, misery, and vice.

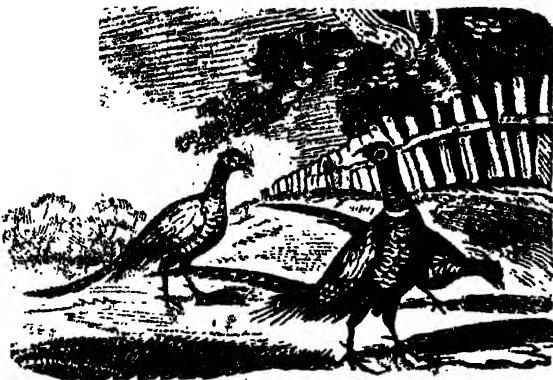
But, have you already far outlived this calculation, and do you see many probable years of existence still before you? Be it so: sit down then, with pen in hand, and calculate—how many years have you employed in your proper sphere of duty? how many years or days have you filled up in acts of beneficence to men, justice to yourself, or devotion to your Maker? Farewell, Reader; pursue these inquiries alone: "Take thy bill, and sit down quickly, and write"—and may CONSCIENCE do its office!

REAL FREEDOM AND REAL IMPRISONMENT.—No prison can deprive the Good Man of liberty: he is at ease in his own mind. The Evil Man, roam where he may, is incarcerated in the deepest of dungeons: his mind is mangled in horror. The difference is in the mind, not in personal circumstances.

Guilt is a dungeon that darkens the soul beyond the power of the sun's brightest beams to illuminate it. The perturbed spirit finds itself ill at ease the world throughout. He who carries Hell in his bosom, would be wretched even in Heaven.

CIVIL AND MILITARY POWERS CONTRASTED.—A person having spoken highly of the merit of military men, and degradingly of magistrates and civil officers, in the presence of the Emperor Sigismond, he silenced him with this reproof: "Hold your peace, blockhead; if the latter always did their duty, the former would not be wanted."

GONDAMAR AND LORD BACON.—Gondamar, the Spanish Ambassador, called upon Lord Bacon after his disgrace, and, intending to taunt him covertly on his misfortunes, said, "My Lord, I wish you a merry Easter." The sarcastic reply to this unfeeling observation was, "And to you, Senor, I wish a good Passover;" thereby pointedly reminding him of his Hebrew descent; one of the most galling reminiscences that could possibly be called to a Spaniard's recollection.



THE PHEASANT.
(*Phasianus Colchicus. Linnæus.*)

This beautiful bird is rather less than the domestic Cock : the bill is of a pale horn colour ; the eyes are yellow, and surrounded by a beautiful scarlet ring : immediately under each eye is a small moveable patch of feathers of a dark glossy purple : the upper part of the head and neck is of the same beautiful colour, iridescent into glossy green and blue ; the lower parts of the neck and breast are of a reddish colour with black indented edges ; the two middle feathers of the tail are about twenty inches long, the shortest of each side less than five, of a reddish brown colour. The hen is less than the cock, and does not exhibit the same variety and brilliancy of colours.

The Ring Pheasant is a beautiful variety of this species having a white ring which encircles the lower part of the neck ; the colours are generally very distinct and vivid : they mix with the common breed ; but it is much to be regretted that this beautiful breed is likely soon to become extinct by means of the indiscriminate destruction of this much-desired article of epicurism, which thins sensibly the numbers of this species of game ; and, indeed, were it not for the woodland preserves kept by many noblemen and gentlemen, it would long ago have been extirpated.

There are many varieties of this bird, of extraordinary beauty and brilliancy of colour : in some gentlemen's woods there is a species as white as snow, which will intermix with the common sorts. The Gold and Silver Pheasants, splendid varieties, originally brought from China, are kept in many aviaries in this kingdom.

The Common Pheasant is a native of the East, from the banks of the river Phasis, as its name implies, supposed to have been introduced into this country by the Phœnicians : they build their nest on the ground like the Partridge, and lay from twelve to fifteen eggs, which are similar to those of the common hen : the young follow the mother as soon as ever they quit the shell. They will sometimes intermix with the common breed of poultry : the domestic hen is frequently employed to hatch and rear a brood of young pheasants from eggs taken from the parent nest.

For an Engraving of the Fire-backed Pheasant of Sumatra, see GUIDE, page 173.

CHARLES V. OF SPAIN AND HENRY VIII. OF ENGLAND.—Charles V. one day observed very shrewdly to an Ambassador of Henry VIII., " Your Master would not give himself the airs he does, were it not that his dominions are surrounded by a HERRING POND."



THE LION.

As the Natural History of this noble MONARCH OF THE DESERT, with anecdotes of its generosity, memory, and gratitude, and accounts of the astonishing numbers which were frequently exhibited by the ancients in the public spectacles, have already appeared in this work (see page 113), we now merely supply a few particulars to accompany the above Sketch of a LION'S HEAD.

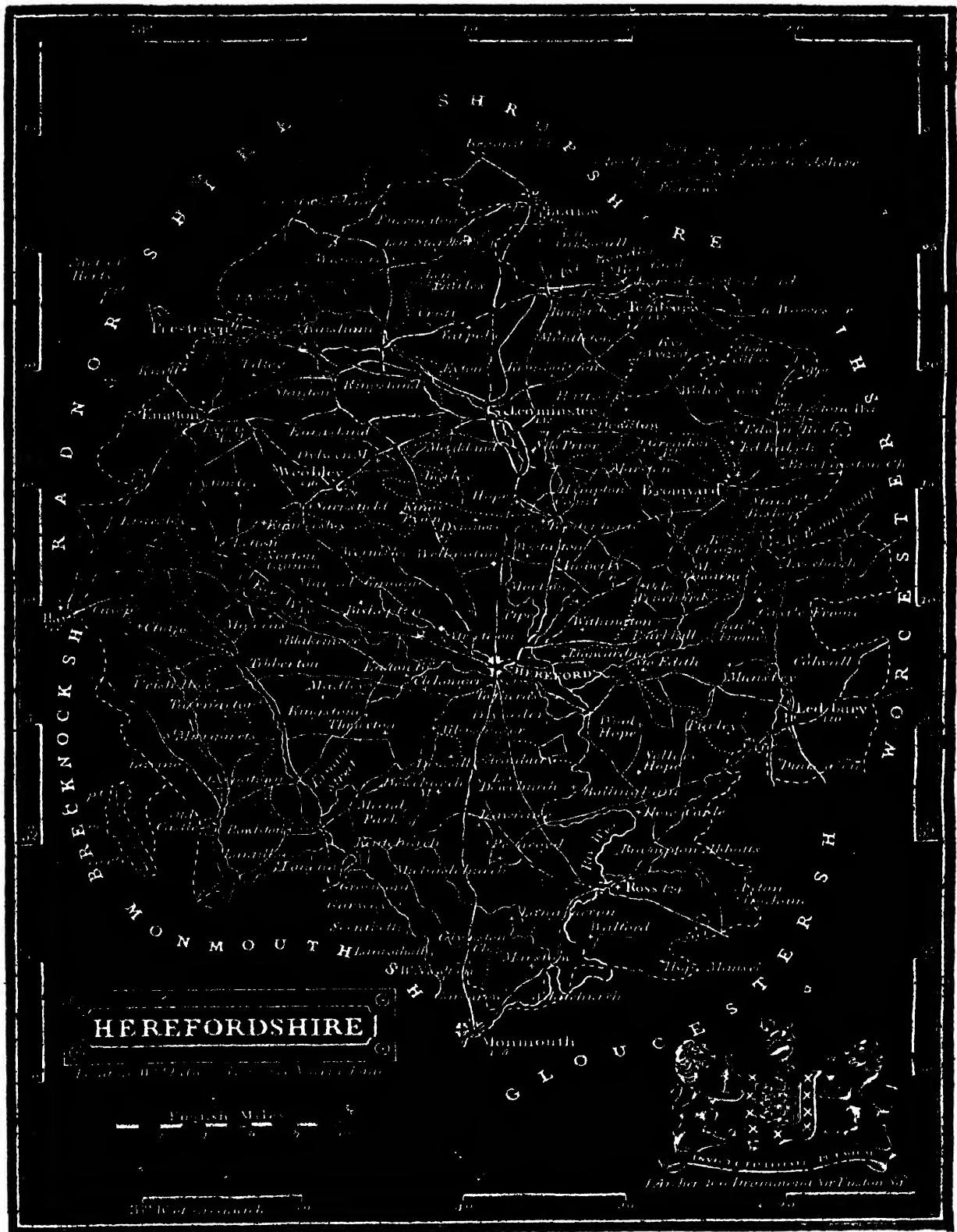
The LION is now an inhabitant of the Torrid Zone only : his habit of conquest renders him intrepid, where he has not experienced the superiority of man ; for even the savage, rude as are his weapons, by means of combined efforts, subdues him ; and in proportion as he becomes acquainted with man's superiority, his natural qualities degenerate.

LIONS which exist in inhabited countries, having experienced man's power, lose their native courage, and will relinquish their endeavours to surprise a flock or herd on hearing the shout of the keepers, and uniformly endeavour to escape the hunter ; but a Lion of the desert, unaccustomed to the power of the human species, will attack even a numerous caravan, will contest his prey obstinately, and will persevere in his exertions even when overpowered, until he falls in the unequal contest.

This noble animal belongs to the cat kind. The structure of the paws, with their retractile claws, the teeth, the eyes, and the internal parts of these two animals, so closely resemble, that the chief distinction observed by comparative anatomists arises from the dissimilar size of the two animals.

The LION, when taken young, or bred in a domesticated state, is capable of a great degree of tameness, and of affection for those to whom it is accoustomed. Many shown in menageries permit frightening liberties to be taken with them by their keepers, who will fearlessly enter their den, and put their own heads into the expanded jaws of the patient brute, without danger or dismay.

He has frequently spared the lives of lesser animals given to him alive as food ; has taken them into favour, lived peaceably and amicably with them, allowed them to partake of his own food, and exhibited every possible indication of sorrow at their death.



HEREFORDSHIRE.

GENERAL TOPOGRAPHICAL DESCRIPTION.

THIS County is in the Province of Canterbury, in the Diocese of Hereford, and in the Oxford Circuit.

It is bounded on the north by Shropshire, on the east by Worcestershire and Gloucestershire, on the south by Monmouthshire, and on the west by Brecon and Radnorshire. In length from north to south it is about thirty-eight miles, in breadth from east to west about thirty-five miles, and its circumference is about one hundred and ten miles.

It includes one City (Hereford), two Borough-towns, five Market-towns, two hundred and seventy-one Parishes; and about eight hundred thousand acres.

The Bishopric of Hereford contains the greater part of Shropshire, four parishes in Monmouthshire, six churches and chapels in Montgomeryshire, eight in Radnorshire, twenty-one in Worcestershire, the whole county of Hereford, except eleven parishes; in all, 379 churches and chapels, of which 166 are inappropriate.

SOIL, CLIMATE, AGRICULTURE, &c.

The soil of Herefordshire is extremely fertile, both in pasture and arable: it is generally a mixture of marl and clay, with a large portion of calcareous earth. The substratum is mostly limestone, of various qualities, some approaching in hardness and beauty to marble.

In the parts bordering on Gloucestershire, iron ore has been frequently met with; although none has been dug of late years; yet from the considerable quantities that have been discovered imperfectly smelted, and from the remains of hand bloomeries which have been found, there is no doubt that iron-works were established here in the time of the Romans.

The air of this county is in general pure, and consequently healthy, particularly between the Wye and the Severn, which has given occasion to a proverb very common among the Herefordshire people,

"Blessed is the eye
Between Severn and Wye."

The Herefordshire breed of cattle have long been esteemed superior to most if not to every other sort in the Island: it certainly is a very superior class, of great size and weight, but small-boned; its colour dark, red, or brown, with a white streak along the neck to the shoulder; under part of the belly and the throat white; face, bald or spotted; horns, bright and spreading, but not long; the head, small; the race is active, tractable, and useful for the general purposes of husbandry. The show of oxen at Michaelmas Fair, at Hereford, cannot be exceeded by any annual collection in England.

The provincial breed of sheep is termed the *Ryeland*, from a district in the vicinity of Ross; they are small, white, and without horns: in symmetry of shape and in flavour, they are superior to most flocks in England: in quality of wool, they are unrivalled among the native breeds.

Herefordshire shows plantations of fruit trees in every aspect, on every quality of soil, and under every culture; but the soil best adapted to most kind of apples is a deep rich loam, when under the culture of the plough. The time for gathering apples is generally the middle of October. In a plentiful year (called a hit), the produce is almost beyond imagination; the trees being loaded to excess, frequently break under the weight of the apples: at these times, indeed, the branches are obliged to be supported on props, or forked poles. This excessive fruitage occurs however but rarely, and the following year is generally unpro-

ductive. In years of abundance, twenty hogsheads of cider have been made from the produce of a single acre of orchard ground.

The particular era when the plantations of Herefordshire acquired the peculiar eminence which they yet retain, was during the reign of Charles I., when, by the spirited exertions of Lord Scudamore, and other gentlemen of the county, it became, in a manner, one entire orchard.

NAME AND ANCIENT HISTORY.

There are various probable derivations of the word *Hereford*: in Welsh, the word Hên-frodd * signifies the *Old Road*: in Saxon, the word *Hereford* signifies the *Ford of the Army*. But the ancient name was *Ereinuc*: some derive it from *Harold's Fort*, having been rebuilt and fortified by him after it had been destroyed by the Welsh.

Aiiconium is the name of an ancient town near this place, mentioned by Antoninus, said to have been destroyed by an earthquake, and Hereford to have been built in its stead.

Herefordshire, Radnorshire, Breconshire, Monmouthshire, and Glamorganshire, constituted the district of *Silures*, a brave and hardy race, who, with the Ordovices, or inhabitants of North Wales, for a long time repulsed the Romans: for all the operations of Ostorius Scapula, who commanded under the Emperor Claudius, were directed to the subjugation of these intrepid and warlike nations, who had chosen the magnanimous Caradec (Caractacus) for their chieftain.

The struggle between discipline and superior numbers on the side of the invaders, and bravery on the side of the patriotic bands of Cambria, was long and doubtful, and the military talents of the British leader long held at bay the skill and experience of the Roman Captain: at length, however, success declared on the side of the more numerous host, and the Britons were compelled to retreat: treachery effected what force could not achieve, and Cartimandua, Queen of the Brigantes, with whom he had taken refuge, delivered the hero bound into the hands of Ostorius.

Even the defeat and captivity of Caractacus did not subdue the determined spirit of the Silures: and the opinion of the Roman general as to the difficulty of his task appears most remarkably proved by a declaration made by Ostorius, that the very name of the *Silures* should be extirpated: certainly a splendid proof that it deserves to be held in perpetual remembrance by every admirer of patriotic bravery.

Ostorius did not, however, execute his threat, as he fell a victim to the fatigue and anxiety occasioned by the success of the Silurian arms. And at length, unconquered, they were compelled by the military talents of Julius Frontinus to retire into the fortresses of Wales, where they were permitted to remain in unmolested security. Herefordshire was then included in the district of *Britannia Secunda*.

As the Silures were the last in their opposition to the Romans, so they were the first to regain their independence on the decline of that power. Their determined opposition to the Saxons under Pendragon and Arthur exhibited the same heroic spirit, until the intestine divisions of the Britons, as well as the perpetually-increasing hordes of their invaders, finally rendered their opposition unavailing.

Brave themselves and open-hearted, they did not suspect fraud and treachery in their enemies: but fraud, treachery, and metheglin, effected more than the seaxes of their insidious invaders.

Herefordshire was finally incorporated in the Saxon

* The Welsh *dh* has the power of the English *th* in the word *thine*: and this is really *dt*; for the *th* in *thin* is distinctly different from the *dh* in *thine*.

Kingdom of Mercia; this, however, was not effected until the Saxon power had attained its highest prosperity under the renowned Offa. He found it prudent to take unusual means to secure his dominions from his enterprising neighbours, which he effected by making a broad ditch, still known as Offa's Dyke, one hundred miles in extent, some traces of which are still visible.

This district suffered repeatedly and severely under the incursions of the Danes, until at length Alured, King of the West Saxons, annexed it to his dominions, and chose as his successor Egbert, who, by uniting the various Saxon States into one sovereignty, laid the foundation of the present prosperity and pre-eminence of the UNITED EMPIRE.

RIVERS AND CANALS.

The principal rivers are, the *Wye*, the *Lug*, the *Munnow*, the *Arrow*, the *Frome*, the *Teme*, and the *Leddon*.

The *Wye* was called *Gwy*, and by the Latins *Vaga*, both signifying its meandering course. Athelstan appointed this river to be the boundary between England and Wales. The *Wye* as well as the *Severn* rises near the summit of Plumlimmon, in Montgomeryshire, and waters this County near the *Hay*. In summer it is subject to deficiency of depth, so as to hinder navigation; in winter, floods frequently cause such an overflow as to effect the same purpose by a contrary cause.

After a course, including in its windings fifty miles, and adding to the beauty of a country perhaps not equalled in picturesque scenery either at home or abroad, it is received into the *Severn*.

The *Lug* rises in Radnorshire, receives into it the *Arrow*, so called from the rapidity of its stream, and then joins the *Wye*. This river is too narrow, and too much sunk within its banks, to be an object of beauty in the landscape; and its being liable to sudden floods has hitherto frustrated every effort to make it useful in internal navigation.

The *Munnow* rises on the Hatterl mountains, and after receiving the *Eske*, the *Olchon*, the *Althney*, the *Dore*, and the *Worms*, leaves Herefordshire, and flowing by Monmouth, joins the *Wye* below that town.

The *Frome* is received by the *Lug* near Mordiford; it is, like most Welsh streams, liable to sudden floods.

The *Teme* or *Team* enters Herefordshire near Brampton Bryan, passing alternately through parts of this County and Shropshire, and discharges its water into the *Severn*, in the county of Worcester. Pearls have frequently been found in the muscle-shells of the *Teme*.

The *Leddon*, or *Leadon*, rises in Radlow hundred, gives name to the town of Ledbury, and joins the *Severn* in Gloucestershire.

A number of brooks add their waters to the rivers noticed above, many of which are applied to mills, and some to irrigation.

CITY AND TOWNS.

HEREFORD, 135 miles from London, is a City of great antiquity, although the date of its origin has not been ascertained: it must have been a place of importance as early as 676, for about that period a synod was held here for the erection of a new see in Mercia, when *Putta* was chosen first Bishop of Hereford.

It was the capital of the Mercian kingdom, under the *Heparchy*, and had a magnificent church as early as the time of Offa. In the time of Athelstan, the city was fortified, and the walls may still be traced.

The Cathedral of Hereford is a very venerable structure, although the architecture in some places is very incongruous with the general style of the building. The Bishop's Palace,

an ancient building, is pleasantly situated near the *Wye*. The Deansery and Prebendal Houses are situated opposite the north-east angle and north side of the Cathedral.

The members of the Cathedral are, a Bishop, Dean, two Archdeacons, six residentiary Canons, including the Dean, a Chancellor of the Cathedral, a Treasurer, Sub-Treasurer, Precentor, twenty-eight Prebendaries, and other subordinate officers.

There are many charitable institutions in this city, a Hospital, Almshouses, Schools, a Lunatic Asylum, and others. There are also several Markets, a Shire Hall, County Jail, and other requisite public buildings.

Once in three years, in September, is held a meeting of the three Choirs of Worcester, Hereford, and Gloucester, when Oratories, and other pieces of sacred music, are performed for the benefit of Widows and Orphans of the Clergy.

ROSS, 124 miles from London, is a market-town, situated on a rock on the eastern bank of the *Wye*. It was made a free borough by Henry III. The streets are mostly on a descent, extremely rough and narrow. The government is vested in a sergeant and four constables. In Caunden's time it was noted for its iron-works, which are yet carried on, with a trade in cider and wool. The "Man of Ross," Mr. John Kyrle, has shed an adventitious lustre on this town: his well-merited character, drawn by Pope in the brightest colours, is familiar to all our youth.

LEOMINSTER, 137 miles from London, is a market-town, situated in a very rich and fertile valley, abounding with orchards, hop-yards, fine meadows, and arable land, the river *Lugg* flowing on its north and east sides, and two smaller streams running through the town.

The old streets are narrow, and many houses are of lath and plaster, fantastically adorned with curious grotesque carvings, and coloured white and black, giving them a most singular appearance: the numerous modern buildings are respectable edifices of brick.

At the period of the Domesday survey, this town appears to have been a place of considerable importance, as the Manor, with its appurtenances, consisting of sixteen dependent estates, had been assigned by Edward the Confessor to his Queen Edith, and was governed by eight *propositi*, or bailiffs; eight *bedelli*, or beadles; and eight *radchenestri*, or free tenants; and contained 238 *villani*, 74 *borderers*, and 82 men and women servants.

The borough is a distinct precinct from the county, holds quarter sessions, and has a Jail, a Bridewell, and many other public buildings; it is governed by a High Steward, Bailiff, Recorder, and twelve Capital Burgesses.

BROMYARD, 125 miles from London, is a small market town, irregularly built and badly paved: it is delightfully situated in the midst of the finest orchards, the *Frome* passing within a short distance to the East, and several small streams flowing on the North and West sides.

LONGTOWNE is a secluded village, near the junction of the upper branches of the *Munnow*: there are the remains of a castle, and to the eastward is an eminence called Money Farthing Hill, from ancient coin having frequently been found there.

KINGSTON, 155 miles from London, is a small market town, situated on the *Arrow*, near the borders of Radnorshire: it is well built, and has an Iron Foundry established by Mr. Meredith, a most respectable individual, supplied with Coal and Pig Iron by the Tram road from Brecon.

WORLE, 147 miles from London, is an ancient Market Town. On the South side formerly stood an ancient castle, which was taken from the Empress Maud by King Stephen;

it is mentioned by Leland, as being a goodly and fine building, but somewhat in decay; the site is now converted into a bowling-green. The town is governed by two Constables.

Three miles from Weobley is the village of Wormsley, where a Priory of Augustine Canons, of the order of St. Victor, was founded by Gilbert Talbot, in the time of King John, and dedicated to St. Leonard de Ponia: the revenues at the dissolution were valued at 83*l.* 10*s.* 2*d.* per annum.

LEDBURY is an ancient well-built Market Town, situated on a declivity near the south end of the Malvern Hills, above one mile west of the *Leddon*, whence it derives its name. The church is a large edifice of Saxon origin, with a fine spire.

On the north side is a square Chapel, dedicated to a female of the name of Katherine Audley, under the name of St. Katherine. The legend relates that "she was a religious woman in the reign of Edward II., who had a maid called Mabel, but not being fixed in any settled place, she had a revelation that she should not take up her rest until she came to a town where the bells should ring of themselves.

"She and her maid Mabel coming near Ledbury, heard the bells ring, although the church-doors were shut, and no ringers there. Here then she determined to spend the remainder of her days, and built a hermitage, living on herbs and sometimes on milk. The King, in consideration of her birth, or piety, or both, granted her an annuity of thirty pounds, to be defrayed out of the estates of Peter de Linssey, in Monyton and Dilew."

During the time of Catholicism it was an old custom at funerals, in this part of the County, to hire poor people who were to take upon themselves the sins of the party deceased. The last human post-mortem scape-goat of this sort is represented by tradition to have been "a long, lean, ugly, lamentable, poor old rascal," living in a cottage on Ross Highway: to the great mortification of all true antiquarians his name is lost in the gulf of oblivion.

The manner of this custom was, that when the corpse was brought out of the house and laid on the bier, a loaf of bread was brought out and delivered to the *Sin Eater* over the coffin, as also "a masar bowle of maple, full of beer;" in consideration of eating the loaf and drinking this "bowle of beer," and sixpence in money, well and duly paid, he took on himself in good sooth all the sins of the deceased, and thereby freed him or her from walking after they were buried.

Whether this ceremony was intended to save the defunct from the trouble of posthumous perambulation, or the kinsfolk from being haunted by their departed relative, is now matter of conjecture. This custom was practised in some parts of the County long after the Reformation, and even during the Protectorate.

Ledbury had once the privilege of sending two members to Parliament, but surrendered its rights on the plea of inability to support its representatives.

POPULATION OF HEREFORDSHIRE.

According to the Census of 1831, the numbers were—

Males.	Females.	Total,
55,716 ..	55,261 ..	110,976

Of which there were—

City of Hereford.....	4,709 ..	5,573 ..	18,282
Broxash Hundred	6,068 ..	5,715 ..	11,781
Grey Tree Hundred	5,833 ..	5,853 ..	11,686
Radlow Hundred	6,565 ..	6,554 ..	13,119
Wolphy Hundred	6,462 ..	6,555 ..	13,014
Wormsloe Hundred	5,583 ..	5,310 ..	10,893

REPRESENTATION OF HEREFORDSHIRE.

	Members.
For the County (no division)	3
Hereford (City).....	2
Leominster (Borough)	2
	<hr/>
	7

By the Reform Bill, *Weobley* (40 voters) was disfranchised.



THE SWAN.

This elegant bird presents two principal varieties, each of which deserves attention; namely, the **WILD SWAN**, called also the **WHISTLING SWAN**, **ELK**, or **HOOOPER**, (*Anas Cygnus ferus*, Linn.); and the **TAME SWAN**, or **MUTE SWAN** (*Anas Cygnus mansuetus*, Linn.). In the present instance we shall confine ourselves to the first of these birds.

THE WILD SWAN.

The **WILD SWAN** measures five feet in length, from the tip of the beak to the end of the tail; and above seven in breadth, from tip to tip of the wings; and weighs from thirteen to sixteen pounds. The bill, three inches in length, is of a yellowish white from its base to the middle, and thence black to the tip: the plumage in the old birds is pure white; next the skin they have a thick fine down: their legs are black.

This species generally keeps together in small flocks or families, except in the pairing season, and at the setting in of winter: at the latter period they assemble in immense multitudes, particularly on the large rivers and lakes of the thinly-inhabited districts of Europe, Asia, and America.

When the extremity of the cold threatens to become insupportable, in order to shun the rigour of the season, they shape their course high in the air in search of milder climates: in such seasons they are most commonly seen in the British Isles and other more Southern countries of Europe: the same is observed in North America.

They do not remain longer than the return of Spring, when they revisit the Arctic regions to rear their nestlings: some few, however, stop short and build their nests in secluded lochs in the mountains of Scotland; in the Hebrides, the Orkneys, or the Shetland Isles: but the principal bodies of them are met with in the large rivers and lakes near Hudson's Bay, and in Kamtschatka, Lapland, and Iceland.

They return in flights of about a hundred each. The young remain there throughout the first year; in August, when moulting and unable to fly, the natives take advantage of this and kill them with clubs, or hunt them with dogs

with great ease: the flesh they highly esteem as a delicious food, as are the eggs, which are gathered in the Spring.

The Icelanders, Kamtschatales, and other Northern tribes, dress their skins with the down on, sew them together and make them into various garments: the North American Indians do the same, and sometimes weave the feathers as barbers make wigs, and then form them into ornamental dresses for their women of rank, while the larger feathers are formed into caps and plumes for their chiefs and warriors. The feathers and down are also gathered in large quantities, and disposed of as articles of traffic to the inhabitants of more civilized countries.

Much has been said of the voice of the Swan, and many beautiful and poetical descriptions have been given of its dying song: no fiction of natural history, no fable of antiquity, was ever more celebrated, oftener repeated, or better received: it suited the lively imagination of the Grecians: poets, orators, even philosophers, adopted it as a fact too pleasing to be doubted.

"Dull, insipid Truth," is, however, frequently very different from the fictions of amiable affecting fables; the voice of the Wild Swan, singly heard, is shrill, piercing, and harsh, something like the sound of a clarinet in an inexperienced performer's hands. But those who have heard the united and varied voices of a numerous assemblage of them, assert that their combined sounds produce a harmonious effect, especially when mingled and softened with the accompanying murmurs of the waters.

The Wild Swans have a remarkable mode of hindering the water they inhabit from freezing, which they effect by keeping up an incessant stir on the surface, by continually dashing it with their expanded wings; they are thereby enabled to obtain their food so long as the season permits them to remain in their favourite haunts.

Their food consists of the grasses and weeds and the seeds and roots of water plants, and the myriads of insects which skim over or float on the surface of the water, or are within the reach of their long and pliant necks.

The female makes her nest of the withered leaves and stalks of reeds and rushes, laying commonly six or seven thick-shelled eggs: she sits six weeks: both male and female are very attentive to their young, and will suffer no enemy to approach them.

The Swan is the peaceful monarch of the lake; secure in his superior strength, he fears no enemy, nor suffers any bird to molest him, nor does he molest or prey upon any: his powerful wing is a shield against the attacks even of the Eagle, and a blow from it is said to be so powerful as to destroy his fiercest foes; even the Fox or the Wolf cannot overcome him in the day, although, surprised by them during night, they sometimes fall victims to their ravenous enemies.

THE OPINION OF A SAVAGE ON WAR.

THE opinion of a man of letters and also that of crowned head, on the Evils of War, are found on page 452. We now turn to a declaration on the same subject by an untaught Savage.

The following is the Speech of the King of Ovahoo, one of the Tonga Islands in the South Seas, delivered to his Chiefs on his attaining the regal dignity:—

"Listen to me, Chiefs and Warriors!—If any among you are discontented with the present state of affairs,

* Or, as he expressed himself in the Tonga language—with the way in which we sit here."

now is the time to go to Hapai; for no man shall remain at Vavaoo with a mind discontented and wandering to other places.

"I have seen with sorrow the wide destruction occasioned by the unceasing WAR carried on by the Chief now lying in the Marly: and what is the result?—the land is depopulated! it is overgrown with weeds, and there is nobody to cultivate it: the principal Chiefs and Warriors are fallen, and we must be contented with the society of the lower class.

"What madness! Is not life already too short? Would not a man's time be better employed in increasing his pleasures and happiness? What folly then to seek for WAR to shorten that which is already too short! Who is there among us who can say, 'I wish to die—I am weary of life?' Have we not then been acting like those of no understanding? Have we not been madly seizing the very thing which deprives us of what we really want?

"Not that we ought to banish all thoughts of fighting. If any power approach us with the front of battle, and attempt to invade our rights, our fury and bravery shall be excited more, in proportion, as we have more possessions to defend.

"Let us, therefore, confine ourselves as much as possible to the cultivation of our own land; for as it is more than sufficient to maintain us, why seek for any other?"

ANCIENT HISTORY OF KENT.

(For the Account of KENT, see page 459.)

THE earliest authentic writer of antiquity who describes this Island, commences his narrative with the invasion of Britain, on the shores of this County. Its provincial history, therefore, involves occurrences of the highest importance in our national annals.

Fifty-five years before the commencement of the Christian Era, and about seven hundred years after the foundation of Rome, Julius Caesar embarked at Boulogne, in the autumn of that year, intending to subjugate this country.

Pre-informed of this intended warlike visit, the Britons had organized a force so formidable a description, that on his arrival off Dover, he found the British army so numerous, so well-appointed, and so judiciously posted, that he gave up all hopes of making a successful descent at the spot first selected, and moved his armament about eight miles further; by some writers alleged to be Richborough, others contend for Deal: the native army executed a counter movement, and by the time his troops were ready to land, the inhabitants were equally ready to oppose their landing.

So long as they fought hand-to-hand, the Britons undoubtedly had the advantage; equal in point of personal strength and intrepidity, and superior in the motives of their warfare. Military science, therefore, was called in to give those legions which had conquered the world a mere chance to escape total destruction. The Roman Galleys were ordered in as close as they could approach, and with those powerful engines which buried showers of destructive missiles on the Britons, seemed to turn in favour of the invaders that contest which previously had to them been worse than doubtful.

Yet even under this fearful odds, the struggle would probably have ended in their defeat, although incited by the presence of their General, when the Standard Bearer of the Tenth Roman Legion called on his comrades to follow him,

or to lose their Eagle,* with this appeal they made a desperate effort, and finally gained footing on dry land in such numbers that their discipline and superior arms becoming available, they repulsed the brave natives and effected the landing of the whole army. After many severe contests, Caesar quitted the island before the winter set in, intending to return the following year to repeat his attempt.

In the ensuing year the lesson he had learned at his first coming had taught him to make greater preparations for his enterprise, and he arrived with a fleet of eight hundred ships: yet even with so overwhelming an armament he did not obtain quiet possession of the country, as the determination of the natives, the intrepid bravery of the troops, and the military skill evinced by their commanders, permitted no favourable incident to occur but what they immediately turned to their own advantage.

At length, Caesar, deeming it prudent to return into winter quarters, took hostages for the fidelity of those tribes which had submitted to his government, and returned to Gaul. Subsequent events calling him into other parts of the Roman States, the Britons were left in unmolested possession of the peace which they had enjoyed until, after the lapse of nearly a century, in the fifty-third year of the Christian Era, Aulus Plautus, Praetor in Gaul, landed in Britain, and, supported and reinforced by the Emperor Claudius, succeeded in subjugating the southern part of this Island, which remained a Roman Colony about four centuries, until the decline of that power occasioned the recall of their troops and the abandonment of their possessions here.

This County, during the stay of the Romans, was included in the division called BRITANNIA PRIMA, and was undoubtedly an important province, as the numerous remains of Roman antiquities still prove the care and attention which they paid to this division of their Colonies.

KENT was the earliest kingdom formed under the Saxon Heptarchy, by Hengist, its first monarch. Its last King, Baldred, being conquered by Egbert, it became part of the West Saxon Kingdom, or Weassex, and so continued until the union of the Heptarchy under the English Crown A.D. 827.

It is said that Christianity first obtained footing in England in this County, under the preaching of St. Augustine and the countenance and support given to it by Ethelbert, King of Kent, an early convert.

When William the Conqueror marched into Kent, the inhabitants insisted on his maintaining all those privileges which the inhabitants of every other county were deprived of. These related principally to the holding of real property and its descent. The Norman granted their demands.

In the commencement of the reign of Richard II., a peasant of the name of Wat Tyler (whether this was a real or an assumed name is doubtful) headed an insurrection of the labouring classes in Essex: suffering under the same grievances, it was seconded by the same class in this County and the neighbouring districts, who joined the insurgents in such great numbers, as speedily to amount to a force estimated at one hundred thousand men.

But Walworth, then Lord Mayor of London, with assassin-like cowardice, basely stabbed in the back him whom he dared not look in the face: and this bandit-act was perpetrated while the unsuspecting Walter, weakly confiding in the solemnity of the King's word, and the sacred character of a peaceful conference, was frankly stating the oppressive nature of these unjust laws under which his comrades suf-

fered, and pointing out the species of redress which they respectfully supplicated, yet firmly insisted on.

And what was commenced in cowardly assassination, concluded in base treason; for when the Monarch had pacified the multitude by granting their claims, and thereby separated their force, he recalled his grants as soon as ever they had effected the purpose which his mean-spirited duplicity had intended them to fulfill.

And under Henry VI., Jack Cade, assuming the name of Mortimer, at the head of twenty thousand Kentish men, after exhibiting talents for military affairs and for government of no mean order, obtained possession of the Metropolis: treachery and the subornation of his followers being successfully resorted to, this threatening insurrection was thereby quelled, and the leaders mercilessly punished.

MENDICITY VERSUS FIREWORKS.—A poor man was apprehended in a country town one Guy Fawkes day, on a charge of selling Crackers. He was put into prison until the next morning. The prison walls exhibited this token of his ideas of the justice of this sentence, and his determination to profit by the experience therefrom derived.

Farewell, my Friends! To jail I go,
Crackers have proved my overthrow;
Take my advice and sell no more,
But beg your bread from door to door.

BISHOP BURNET'S ABSENCE OF MIND.—This eminent character was a remarkably absent man in company. He earnestly entreated the great John Duke of Marlborough to allow him to meet Prince Eugene at his table. "Bishop," said the Duke, "you know how forgetful you are: will you be accurate?"—"Your Grace may depend upon my caution."

Prince Eugene, observing the Bishop at table, inquired very politely of him whether he was ever at Paris. "Yes, and please your Highness," said the Bishop, "I was there in the very year the Princess of Soissons was taken up on suspicion of poisoning her husband."

The Bishop immediately recollecting himself, that this lady was the mother of Prince Eugene, retired covered with confusion; and it is superfluous to add that neither the Duke nor Prince Eugene was anxious to recal him.

SEBASTIAN CABOT.—1477—1557.

SEBASTIAN CABOT, a navigator of great eminence and abilities, was born at Bristol in 1477. His father, JOHN CABOT, was a Venetian Pilot, who resided in that city.

SEBASTIAN was instructed by his father betimes in Arithmetic, Geometry, Geography, and all those branches of knowledge best calculated to form a skilful seaman: by seventeen, he had made several voyages, thereby adding a practical knowledge of Navigation to the theoretical part of that science.

The first voyage of great importance in which he was engaged, appears to have been that undertaken by his father, JOHN CABOT, for the discovery of unknown lands; and also of a North-west passage to the East Indies. Columbus having returned from his first expedition in 1493, JOHN CABOT, in 1495, presented proposals to Henry VII. for attempting similar discoveries.

His proposals were accepted, and the King granted letters patent, dated March 5, 1496, to JOHN, and his three sons,

* The Eagle was the standard of the Romans, and was looked on with the profoundest veneration that patriotism could dictate or that superstition could inspire.



SEBASTIAN CABOT EXPLAINING HIS DISCOVERIES TO HENRY VII.

LEWIS, SEBASTIAN, and SANETIUS, to sail with five ships, under English colours, for the discovery of unknown countries, and granting to them and their heirs all the countries they might discover, to be held of the Crown of England, reserving to himself and his heirs a fifth part of the net profits.

Henry also fitted out "a gallant ship," at his own expense, and some merchants of London and Bristol, alive to the importance of the undertaking, provided four smaller vessels. With this little fleet, JOHN CABOT sailed from Bristol in 1497, and on June 24 discovered Newfoundland, and soon after the Island of St. John. He then sailed to Cape Florida, and returned to Bristol with a good cargo, and three natives of the newly-discovered countries; he was graciously received on his return, and knighted by Henry.

It should therefore appear that the English were undoubtedly the discoverers of the Continent of America, as Columbus was unacquainted with it until his last voyage, which did not take place until the year following, when he coasted along a part of the Isthmus of Darien.

The exact day of this important discovery is known from a Latin inscription on a large map drawn by SEBASTIAN CABOT, which hung in the Privy Gallery at Whitehall: the following is a translation of the Latin original:—"In the year of Our Lord 1497, John Cabot, a Venetian, and his son Sebastian, with an English fleet, set out from Bristol, and discovered that island which no man had ever before attempted. This discovery was made June 24, about five o'clock in the morning. This land he called Prima Vista (*First-seen*), because it was that part of which they had the first sight from the sea. The island which lies out before the land he called St. John's, because it was discovered on the festival of St. John the Baptist. The inhabitants of this island wore beasts' skins, and esteemed them as the finest garments."

To this account Purchas adds, "In their wars they used bows, arrows, pikes, darts, wooden clubs, and strings. They found the soil barren in some places, and yielding little fruit; but it was full of White Bear and Stag, far larger

than those of Europe. It yielded plenty of fish, and those of the larger kind, as Seals and Salmon. They found Seals there about a yard in length, and a great abundance of that kind of fish which the Savages called *Bacalao* (*Cod-fish*). They also discovered there Partridges, as also Hawks and Eagles; but what was remarkable in them, they were all as black as Ravens." It is probable that SEBASTIAN made numerous other voyages during the ensuing twenty years, but we have no account of them.

He afterwards, under Henry VIII., entered into a connexion with Sir Thomas Port, Vice-Admiral of England, but failed in his design owing to the timidity of his conductor. He therefore left England, and went into the service of Spain, where he was treated with great respect, and appointed Pilot-Major, or Chief Pilot of Spain, under which encouragement he made several voyages. He afterwards returned to his native country, and was introduced to Edward VI. That young Prince, who was very solicitous to acquire knowledge, and whose skill in maritime affairs was much greater than could have been expected from his youth, took great pleasure in the narration of CABOT, and granted him a pension of 16*s*. 13*d*. per annum, as Grand Pilot of England; this was continued by Philip and Mary.

He maintained a high character for his general knowledge, integrity, and scientific acquirements, and was engaged in many important employments. He is supposed to have attained the age of fourscore, but the precise date of his decease is not known.

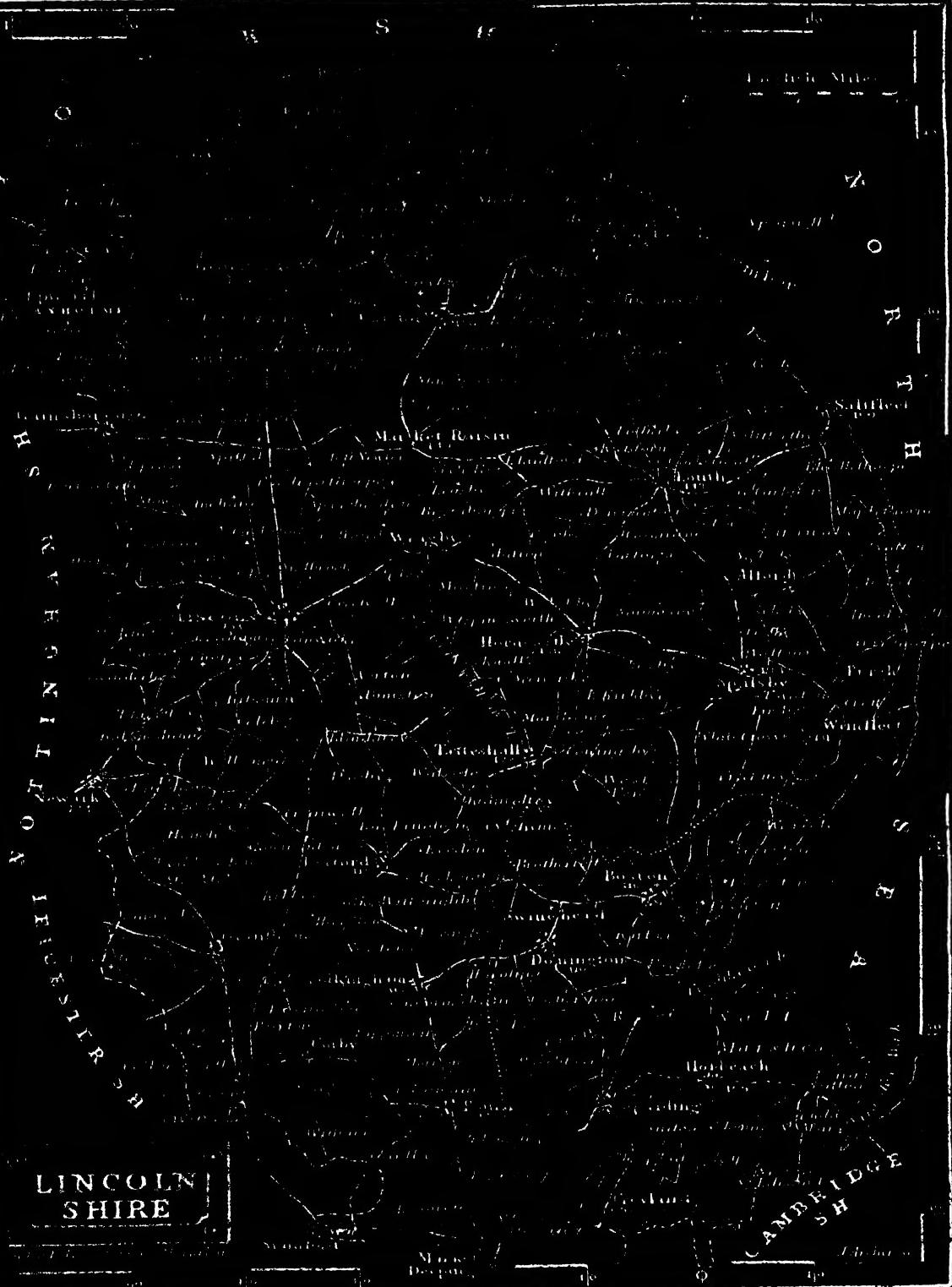
By his capacity and integrity, he contriv'd not a little to the service of mankind in general, inasmuch as this kingdom: it was he who first took notice of the Variation of the Compass (which previously had been supposed always to point due North), which is of such indispensable importance in Navigation, and concerning which the scientific have been engaged in constant inquiries from that time to the present.

NO. LXII.] GUIDE TO KNOWLEDGE.

SUPPLEMENT
PR. ONE PINT.

LINCOLN
SHIRE

CAMBRIDGE
SHIRE



LINCOLNSHIRE.

GENERAL TOPOGRAPHICAL DESCRIPTION.

On the North, LINCOLNSHIRE is bounded by the *Humber*, which separates it from Yorkshire : the German Ocean and an arm of the Sea, called the *Wash*, bound it on the East ; on the South it abuts on Rutlandshire, Northamptonshire, and Cambridgeshire : its general form is an irregular oblong. It is in the Province of Canterbury, the Diocese of Lincoln, and in the Midland Circuit.

It comprises nearly two hundred square miles, or nearly nineteen hundred thousand acres. It is a maritime County, and is divided into three parts, namely, Lindsey, Kesteven, and Holland.

LINDSEY is a very large division of this County, occupying nearly one half of it, from the sea to Nottinghamshire, and from the *Witham* to the *Humber*, extending about forty-five miles each way. On this tract the soils are greatly varied, and it is marked by many irregularities of surface, containing no fen land.

KESTEVEN is another large district, also much diversified, but without fens. Although there is some low land, yet being mostly enclosed and cultivated, it contains much rich pasture and arable land.

HOLLAND constitutes the South-east side of the County : it is divided into *Upper* and *Lower*, and consists almost entirely of fens and marshes, some in a state of nature, others interspersed with numerous drains and canals, and crossed by raised causeways, called *Droves*. The *Lower Division* is only preserved from constant inundations by its mounds. The inhabitants are obliged to form reservoirs of rain water, as that of the fens is brackish. Most of the drains empty into the *Welland* and the *Witham*.

Among the still undrained fens, large flocks of geese are bred, and astonishing quantities of Wild Ducks are taken in the decoys. (See GUIDE, page 132.) Teal, Widgeon, and other aquatic birds, are also procured ; among them are, Wild Geese, Grebes, Godwits, Whinibulls, Coots, Ruffs, and Reeves : the Avocetta (whose bill bends upwards), Knotts, Dottrels, and numerous others. These breed in the Fens in amazing number, obtaining their food in astonishing quantities from the morasses, ponds, and streams.

The soil of AXHOLME, another district of this County, may be reckoned the first in England, consisting of black sandy loams, warp lands, brown sand, and rich loams of a soapy and tenacious quality.

ANCIENT HISTORY.

The ancient inhabitants of this district were called *Coritani* : the Romans called the capital of it *Lindum*, or *Lindecollina* ; and included it in the Province of *Britannia Prima*. The Saxons adopted the Roman name, and called it *Lincolnschyre*. The Anglo-Saxons incorporated it into the Kingdom of *Wessex*. The Norman called it *Nicolshire*, and divided it among his brother robbers.

CLIMATE, SOIL, AND AGRICULTURE.

Lincolnshire being proverbially a County of Fens, has obtained a name for an unhealthy climate, which, however just it may have been in some parts in by-gone times, is now by no means applicable ; for the causes of the cold, damp, and aguish character, have been for many years declining : the progress of drainage, and a more complete cultivation, have gradually contributed to render the air more dry and consequently more healthy. This remark may be made relative to all districts, which become more salubrious,

in proportion as they are more cultivated ; and more friendly to human life, in proportion as the means of supporting human life are increased in productiveness. The centre of the County and the district of the Trent is very healthy : the air on the coast is very salubrious, and numbers flock to it every summer in search of health and relaxation.

There are two ranges of very high land running through the greater part of the County from North to South : that in the East may be called mountainous, and is called the *Wolds* ; the Western range, on which stands the County Town, is called the *Cliff* : more westward still is a fine extent of rich pasture, along which the *Trent* passes.

Eastward of the *Wolds*, lies also an extensive tract of fine feeding land, which is watered by overflowing springs : on boring the substratum of clay, fine spring water gushes up, and in most places will rise ten feet above the surface, if confined in a tube : these cheap artificial springs are general, and many hundreds are continually running, contributing greatly to the fertility and value of the land.

The *Fens* form the most prominent feature of this County : where fully cultivated and completely drained their produce is incredible : but it is a subject of great regret, that no general system of drainage, including every district which can be made to communicate with the sea, has yet been effected : nothing short of one uniform and connected plan can be of full avail : and so many apparently rival interests are at stake, and so little real public spirit exists, notwithstanding that it is so much boasted of, that such a universal plan is more to be wished for than hoped for.

The soil of Lincolnshire is so various as to include all sorts of land that are to be found in the whole kingdom, and its management varies accordingly. There is a very curious article of manure, said to be the richest of any dressing hitherto discovered, namely, the *Stickleback* : we presume that few of our readers need to have this object of the juvenile angler described, with its various species of *Flakers* and *Cuck Salmon*. This minute fish is so plentiful in many of the Fens, that, particularly when they shoal from one district to another, men have made four shillings a day each by catching and selling them at a halfpenny a bushel.

Rabbits have always been an article of great consideration and attention in the light soils of this County, and immense warrens are kept for the purpose of supplying London with the skins : this was once as profitable a stock as could be attended to ; but latterly many warrens have been laid down to other purposes.

It is impossible to speak too highly of the *cottage* system of this County. Round Folkingham, and other places, when inclosures took place, during the late war, by the Acts of Parliament, at least three acres of land were assigned to every cottage ; this, of course, includes a garden, and keep for a cow : thus land, gardens, cows, and pigs, are within reach of the labouring classes. On views of humanity and benevolence only it is gratifying to the considerate breast to see in comfortable circumstances that class of people on which all other classes depend.

RIVERS AND CANALS.

The principal Rivers that rise in this County or pass through it are, the *Trent*, *Ancholme*, *Welland*, *Glen*, and several smaller streams.

The *Trent* rises in Staffordshire, receives the *Dun*, and, joining the *Ouse*, falls into the *Humber*. It is navigable for canal-boats from *Gainsborough* to its estuary.

The *Ancholme* rises near *Market Rasen*, and flowing northward by *Glandford Bridge*, is navigable to the *Humber*.

The *Welland* rises in Northamptonshire, passes *Market Deeping*, enters the *Fens*, which it assists materially to drain, and meeting the *Glen*, falls into the *Foss-dyke Wash*, East of *Boston*.

The *Witham* only is properly a Lincolnshire river, its source is near *South Witham*: it proceeds by *North Witham*, *Cottersworth*, *Easton Park*, *Great Poston*, *Little Poston*, *Bolton Park*, *Syston*, *Lincoln*, and joins the *Sea at Boston Deep*s. Much of the present channel of this river is an artificial cut, made for the purpose of carrying off the water of the *Fens* through or near which it runs. The mouth of this river is the only inlet fit for the purpose of navigation, and here *Boston*, the port of the County, is situated.

CANALS.—The *Foss-dyke* is an artificial trench about seven miles in extent, from the Great Marsh, near *Lincoln*, to the *Trent*, near *Torksey*, and is supposed to be of remote antiquity.

The *Car Dyke* is also a Canal of great antiquity; it passes through *Aveland* on its way to *Witham*. It enters Lincolnshire at *West Deeping*, runs in a direct line to the river *Glen*: it passes the *Eau* to the *Little Ouse*, and on to *Billinghay*, falling into the *Witham* at *Bardney*. This noble testimonial of the science and public spirit of early times, receives from the hills all the drainings and overflowing waters, which, but for this catch-water-drain, would inundate the *Fens*.

A Canal goes from *Lincoln*, along the *Witham*, to *Boston*, at the termination of which is a large and curious sluice.

There is another Canal from *Grantham*, that runs thirty-three miles to *Nottingham*, and falls into the *Trent* near *Holme Pierrepont*.

The *Ancholme Cut* is navigable from *Bishop's Bridge* to the *Humber*, at *Ferraby Sluice*.

There are also Canals from *Horncastle* to the *Witham* at *Dogdyke*: from *Louth* to the *Humber*: *Caister Canal* joins the *Ancholme*, in the parish of *South Kelsey*. The *Stainforth and Keadley Canal* commences at the *Dun* and joins the *Trent*.

CITY AND TOWNS.

The City of *LINCOLN* is large and long, and consists of two principal streets, and some smaller ones branching off at right angles: the entrance from London is by the Norman *Southgate*, called the *South Toll Bar*.

It is divided into two parts, called *Above Hill*, and *Below Hill*: the first is principally occupied by the gentry; the second, by the merchants and trades-people. The gradual ascent of the houses erected on the declivity of the hill, as crowned by the magnificent Cathedral, forms a very striking picture.

The *Cathedral*, or *Minster* as it is usually termed, is justly the pride and glory of *Lincoln*. Having attracted the attention of the traveller from twenty miles distance, on his nearer approach, it excites his wonder by its extent, charms him by its elegance, and delights him by its symmetry. Its just proportions, the harmony of its parts, and the extreme lightness of the edifice, considered as a whole, impress the spectator with the idea of one of the most elegant pointed gothic structures that the entire kingdom can show.

The original church, built by *Remigius* in 1086, was burnt down in 1124: it was rebuilt by *Bishop Alexander*, with an arched stone-roof, for the prevention of fire in future. *Hugh*, *Bishop of Lincoln*, in the time of *Henry II.*, greatly enlarged it.

The height of the two western towers is one hundred and eighty feet; the great tower in the centre of the church, from the top of the pinnacle to the ground, is three hundred feet; its width fifty-three feet. The exterior length of the church, with its buttresses, is five hundred and twenty-four feet; width of the western front, one hundred and seventy-four feet; exterior length of the great transept, two hundred and fifty feet: the height of the vaulting of the nave is eighty feet. *Great Tom* of *Lincoln* is the largest Bell in England. It weighs 9894 pounds, is twenty-one feet in circumference, and measures four hundred and twenty-four gallons, ale measure.

Few places exhibit so many ancient remains as *Lincoln*: Saxon arches, Norman arches, pointed Gothic arches; antique doorways, turrets, ancient walls, mullioned windows, and other fragments of dilapidated buildings, meet the eye in every part of the city, even as forming parts of *Barns* and *Stables*.

ANCASTER is supposed to have been a Roman village, called by them *Crocolana*: *Horsley* calls it *Causenna*: at the south end are the remains of a castle, encompassed by a ditch and a rampart.

BOSTON is a considerable market-town, situated 116 miles from London, built on both sides the *Witham*, not far from its influx into the sea, and therefore it enjoys a good trade; but its harbour only admits vessels of light draft of water. Its name is an abbreviation of *Botolph's Town*, from a Saxon of that name who founded a monastery here.

This town was incorporated by *Henry VIII.* *Elizabeth* gave the Corporation a Court of Admiralty over all the adjoining sea-coasts. The neighbouring fens are in some places fifty miles broad.

HOLBEACH is a market-town, seven miles east of *Spalding*: it is a place of great antiquity, and has a fine Church, consisting of a Nave, Chancel, Aisles, Porch, and square Tower, surmounted with an octangular ornamented spire, each angle charged with crockets, the windows with canopies, &c.

CROYLAND is a market-town of great antiquity: it has a very curious triangular bridge, connecting the four streets, which otherwise would be separated by water-courses: it is also famous for its Abbey, founded by *Ethelbald* in 716, dedicated to St. *Guthlac* and St. *Bartholomew*; the first of these saints was a pious hermit living here. In 870 the Danes burnt the monastery and murdered its inmates. It was several times burnt and rebuilt. The venerable remains of this once-celebrated *Abbey* are extremely magnificent.

GRANTHAM is a borough and market-town on the *Witham*, on the ancient Roman road called *Ermine-street*, and is supposed to have been a strong Roman station. A navigable canal passes from this town to *Nottingham*, where it joins the *Trent*, and thence runs to *Cromford* in Derbyshire.

GAINSBOROUGH is a considerable market-town, 150 miles from London, on the *Trent*. The *Old Hall*, commonly called the *Palace*, is a singularly-planned edifice; it forms three sides of a quadrangle, being open to the south: in the arches within the nave are niches, with figures of kings and warriors: the highest tower is seventy-eight feet high; the whole building is about six hundred feet square: it was once moated round: it is said to have been the palace of *John of Gaunt*. The *Trent* is navigable for vessels of one hundred and fifty tons burden.

GRIMSBY is a borough, a market and a sea-port town, 170 miles from London, which formerly enjoyed a considerable share of foreign commerce, and was distinguished

for its inland trade. In the reign of Edward II., it furnished eleven ships, and one hundred and seventy mariners, to assist at the siege of Calais. It is one of the most ancient boroughs in the kingdom, having had a Mayor in the reign of John, and sent two members to Parliament in the 23rd of Edward I., which is the earliest period of cities and boroughs sending representatives.

In the vicinity of this town are several of those extraordinary fountains called Blow-wells, the water of which rises even with the surface, and sometimes even overflows: they are vulgarly supposed to be fathomless, but this is an erroneous opinion.

HORNCastle is an ancient, large, well-built market-town, 136 miles from London, on the banks of the *Bane*, thence called by the Romans *Banovallum*. The *Bane* was made navigable to the *Witham* in 1792. Tanning is the principal branch of trade carried on here.

About two miles from Horncastle stands Scrivelsby Hall, anciently belonging to the Marmions, from whom, by marriage, it came through the Ludlows into the family of the Dymocks, its present holders.

This Manor is held by barony and grand serjeantry, by this service, that at the coronation of a British Monarch, the then Lord, or, if he be not able, some person in his name, shall come, "well-armed for war, upon a good war-horse, into the presence of Our Lord the King; and shall then and there cause it to be proclaimed, that if any one shall say, that Our Lord the King has no right to his crown and kingdom, he will be ready and prepared to defend, with his body, the Right of the King and kingdom against him, and all others whatsoever."

LOUTH is 150 miles from London: it is a large, well-built town, and has been much improved: it is one of the gayest towns in Lincolnshire, with its Assemblies, Concerts, Billiard-rooms, Card-rooms, News-rooms, Subscription Libraries, &c.; there is also a Literary Society, which is very well supported.

A Canal passes from Louth to the *Humber*, which it joins at *Tetney Lock*.

The Common Seal of this Town would indicate that education was here set great store by in early times: it represents a pedagogue flagellating the posteriors of a suppliant youth, the other scholars are seen at their forms: the motto, "QVI PARCIT VIRGE ODIT FILIV. 1552."—"He that spareth the rod, hateth his child."

STAMFORD, 89 miles from London, is an ancient borough and market-town, large and well built, situated on the *Welland*, on the borders of Northamptonshire and Rutlandshire. It was fortified by Edward the Elder against the Danes, and held by Stephen in his contest with the Emperor Maud. There the Barons met to concert measures against John: it was then a large place, having fourteen parish churches; but it suffered so severely in the wars of the Two Roses, that by order of Edward VI. they were reduced to seven, and subsequently to five. The *Welland* is navigable to this town for barges. The principal trade is in malt, coal, and freestone.

The Mayor is the King's Lord-Lieutenant, and immediately under his Majesty's command, and is to be esteemed, within the liberty and jurisdiction of the Town, "the second man in the Kingdom:" the grant of these privileges concludes thus, "Ut ab antiquo usu fuerunt"—"As of ancient time they had been accustomed." So that this Charter, granted in 1461, appears to have been only a confirmation of privileges still more ancient, and not a grant of new ones. In this town subsists the custom of Borough English, by which the younger sons inherit the lands and

tenements of a father dying intestate, to the exclusion of the eldest. It is said that this was because the eldest was always provided for by being taken as a retainer into the service of the monarch.

POPULATION OF LINCOLNSHIRE.

	Males.	Females.	Total.
	158,717 ..	158,527 ..	317,244
Of which the following show the larger numbers.			
Lincoln, City	5,644 ..	6,199 ..	11,843
Grantham, Borough, with the Soke	5,216 ..	5,564 ..	10,780
Elloe, Wapentake	15,193 ..	14,121 ..	29,314
Kirton, Wapentake	7,469 ..	7,308 ..	14,777
Boston, Borough	5,094 ..	6,146 ..	11,240
Bolingbroke, Soke	5,729 ..	5,590 ..	11,259
Bradley - Haverstoe, Wa- pentake	5,953 ..	5,966 ..	11,919
Calceworth, Hundred	5,118 ..	5,148 ..	10,266
Corringham, Wapentake	6,465 ..	6,718 ..	13,183
Louth Eske, Hundred	6,904 ..	7,123 ..	14,027
Manley, Wapentake	11,511 ..	11,516 ..	23,037
Yarborough, Wapentake	9,660 ..	9,819 ..	19,497

REPRESENTATION OF LINCOLNSHIRE.

For the two Divisions of the County.

	Members.
Lindsey (<i>Lincoln</i>)	2
Kesteven and Holland (<i>Sleaford</i>)	2
City and Boroughs.	
Lincoln	2
Great Grimsby	1
Boston	2
Grantham	2
Stamford	2

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By the Reform Bill, Great Grimsby (voters 300) lost one Member.

OBSERVATIONS ON THE HISTORICAL CHARACTER OF JOAN OF ARC.

(See the *Guide to Knowledge*, page 52.)

In Politics, and in History, which contains records of political events, the difference between the opinions of opposite parties on the same subject is so diametrically contrary, that an unbiased spectator or reader, if such a being exist, cannot recognise the same fact or the same character under representations so energetically dissimilar.

This observation is strikingly correct in regard to that remarkable historical character, **JOAN OF ARC**, the **MAID OF ORLEANS**, whose conduct and success at a most perilous juncture of the French Annals, produced such incredible results, turning the uninterrupted tide of success of one party first into utter dismay, and then into total defeat, and raising the standard of the desponding host in unwonted success and unprecedented triumph. Her true character was viewed by the conflicting nations in such a contrary manner, that, as on the one hand, she was regarded as little, if anything, inferior to an Angel, her mission was represented as divine, her character as supernatural, her conduct as the direct inspiration of Heaven, her miraculous success as the immediate result of celestial agency; so, by her dismayed oppo-

nents, every epithet of detestation and horror was lavished on that mysterious being, whose principal, or perhaps whose only fault was, her successful resistance to their arms. And both Poetry and the Drama were enlisted by the conflicting nations to blazon forth in the exaggerations of fiction those opinions which history or tradition handed down as facts.

Times of national distress, of war, of civil war especially, call out virtues and vices, in degrees which under ordinary occasions are thought incredible. Human nature seems to be almost changed by circumstances: these render the feeble bold, and the bold ferocious; or they undermine the confidence of the courageous, and the valiant sink into utter despondency.

The Civil Wars in England in the seventeenth century, furnished not a few instances of Ladies defending towns, or castles, or mansions, in the absence of their husbands. Some of them received public honours for their prowess; while the fortitude of others was rewarded by success only.

It is probable that this disposition advanced by progressive degrees; and that these heroines, after being inured to the din of arms and its feats, in the persons of their brothers, or husbands, or fathers, acquired at length a habit of hardihood, of which at first neither themselves nor any others thought them capable.

The tilts and tournaments of the days of chivalry had undoubtedly a tendency to familiarize the female sex to the circumstances and accidents of war; and those who commanded knights to endure for their sakes the perils and dangers which constitute the basis of romance, were not far from being themselves ready to share the dangers by something more than distant sympathy.

Various passions contributed to rouse the fair to arms; patriotism, ambition, emulation, jealousy, love, revenge, anger, and hatred. The tutorage they bestowed on their sons was incessant praise of valour; they took a pride in their exploits; and although all might not equal the heroic firmness of the Spartan matron, who, giving his shield to her son bid him return "either with it" (as thy trophy), "or on it" (as thy bier); yet many might choose to express themselves in the language of ardour to those resorting to the field of honour, and bid them "win their spurs, before they wore them."

We learn from Rymer's *Fœdera*, Vol. ix. p. 911, that at the Siege of Sens, in 1420, there were "many worthy ladies and gentlewomen, bothe French and Englishe, of the whiche, many of them begonne the faitz of armes long time agoon, but of laying at seges, now they begynne first."

In our own days we have seen the famous *Augustina Saragossina* defend her gun, when the men belonging to it abandoned their ground before the enemy; and hundreds of Spanish women, of all ages and of every rank, fell in that contest from which she derives her name.

These instances contribute to abate the idea of the miraculous in the case of Joan of Arc, whom we may look upon as one of those heroines which occur from time to time, that the remembrance of them may not be obliterated; yet at distant intervals, that nature may not be too often offended at a change which she suffers with reluctance, while she regrets as well the extraordinary occasion as the violent metamorphosis.

The fascination of public report, and the sway of general persuasion over the mind, are often blindly adopted in spite of better knowledge. Our own days have seen the most incredible tales reported and propagated with the rapidity of lightning, and the most absurd falsities obtain belief.

From all magic and sorcery, and dealings with the Evil

One, we readily absolve JEANNE D'ARC; we equally disbelieve all her supernatural communications with angels, and informations derived from above; and however they may emblazon the fictions of the drama, we must dismiss them from the page of history.

Nevertheless JEANNE D'ARC was a remarkable person. To France a fortunate tool for State policy to work with; to England a scourge for foolish superstition, or wicked dissension: an occasion of panic without cause, in the judgment of reason and common sense; but of angry debate and contradictory opinion where statesman-like jealousy was not checked by more truly statesman-like forbearance and magnanimity.

What JEANNE undertook she performed,—not a little aided by the very boldness of the undertaking; an ordinary mind would not have conceived the purpose, nor employed the means, nor have realized the events. But JEANNE was no ordinary mind, she was a heroine: and had not the intrepidity of her mind, the decision of her character, and the fervour of her patriotism, influenced her conduct and supported her exertions, no prompting, no tutoring, no artificial means employed by state-craft, could have raised her to that elevation of enthusiastic ardour which incited her to attempt, and enabled her to perform, feats of arms at which the most prudent would hesitate, and the boldest would pause.

From the following account of her early life we learn those particulars which would naturally prepare an ardent mind for exertions beyond and above the natural timidity of the female character:—

JEANNE D'ARC was born at Domremy, a hamlet which, from that circumstance, was afterwards called Domremy-la-Pucelle, in the parish of Greux, and diocese of Toul, near and above the town of Vaucouleurs, both skirting the river Meuse; though in Barres, and on the frontiers of Lorrain, it belonged to France, and the inhabitants were loyal, notwithstanding many neighbouring hamlets favoured the English and Burgundian cause.

It appears from the strict inquiries made in 1429 by order of Charles VII. that she was the daughter of Jaques and Isabel d'Arc, an honest industrious pair, who worked sufficient land and cattle to employ and subsist a family of three sons and two daughters.

All JOAN's learning and education consisted in the pater-noster, the angelic salutation, the apostle's creed, and to handle the distaff; however, to these very limited attainments, she of herself superadded some of a different kind, which proved eminently useful in the subsequent climax of her life.

Passing the first years of that life in tending cattle and other rustic avocations, there was at intervals ample leisure not only for solitary meditation, but also for rustic amusements; in these last, the natural bias of inclination displays itself earlier, and more decidedly, than in any other pursuits, because they are the first employments of free will, the first enjoyments of liberty.

JOAN exercised herself either in running races with her companions, or in skirmishing with imitative lances, after the manner of skilful knights; armed with long poles or sticks, she maintained lance-shocks so rough, that bystanders were both astonished and pleased to see her at the exercise; at times she tilted against trees, at times mounting the horses she took to graze, sat them as well as the best cavalier.

She was not yet thirteen, A.D. 1422, when Charles VI. died; the troubles that agitated all France, becoming a common topic of discourse from the castle to the cot, reached

her native village, where, we may suppose, from its remote situation, simplicity of manners fostered that romantic ardour, which growing with her growth, and strengthening with her strength, afterwards surmounted all the impediments with which her humble origin had surrounded her.

We shall now give the opinion of her national enemies as to that character from which they had suffered so severely.

Her accusers declared her to be, "A sorceress, conjuror, false prophetess, a worshipper of demons, a conspirator, full of and wholly devoted to magic, savouring ill of the Catholic faith, sacrilegious, idolatrous, apostate to the faith, blaspheming the name of God and his saints, scandalous, seditious, troubling and preventing peace, provoking to war, cruel, desiring the effusion of human blood, inciting to shed it, having entirely abandoned and cast off the modesty and decency of the feminine sex, taken the habiliments of military men without any shame or confusion, forsaken and despised the law of God and of nature, and the ecclesiastical discipline before God and man, seducing the princes and the people, having consented that they should adore her, and kiss her hands and her garments, to the great contempt and injury of the honour and worship due to God; they, therefore, demand that she be declared heretic, or at least greatly suspected of heresy, and legally punished according to the divine and canonical institutes."

For this she was condemned and executed by her English adversaries, into whose hands, unfortunately for the national character, she had fallen; but her condemnation was afterwards annulled: as witness the following solemn testimonial, which embodies the opinion of her countrymen as to the character and conduct of one from whose exertions they had derived such great advantages:—

"By authority of the Holy Apostolical See, we, John, Reverend Father in God, Archbishop of Rheims, and William, Reverend Father in God, Bishop of Paris, and Richard, by the grace of God, Bishop of Coutances, and John Brehal, Doctor in Theology, of the Order of Friars Preachers, Inquisitor of Heresy and Idolatry, in the kingdom of France, Judges delegated and ordained by Our Holy Father, at this time Pope,

"We, being at our High Tribunal, having always God before our eyes, by a definitive sentence, given and uttered in our judicial seat and high tribunal, we, before mentioned, do utter, pronounce, decree, and declare, that the said process, full of frauds, cavils, corruptions, and wholly repugnant to justice and equity, containing manifest errors and abuses, likewise the aforesaid abjuration, and all the false and iniquitous executions that have proceeded from, and followed it, ought to be abrogated, annulled, torn, and destroyed.

"And moreover, inasmuch as justice and reason persuade and command us, we abrogate, disserve, disannul, and discharge them from all force, power, value, and virtue.

"And we do sentence and declare the said JOAN (whom God deliver), her brothers and relations, actors and appellants, never to have contracted or incurred any spot or stain of infamy; but by reason and occasion of premises, to be innocent, inculpable, and exempt from the crime and sin which falsely they imputed to the said Maid.

"Furthermore, we enjoin public and solemn notice and execution of our said sentence, to be done immediately and without delay, in this town and city of Rouen, in two places, that is to say, one this day, in the Square and Burying-ground of St. Ouen, at which place a general procession shall be made, and a solemn sermon by a venerable Doctor in Theology; and the other at the Old Market Place, where the general procession shall go to-morrow morning, and

there shall be made a solemn sermon by a venerable Doctor in Theology; to wit, in the place in which the said Maid was cruelly and horribly burnt and suffocated."

Here, then, are three distinct opinions for the reader's choice:—

1. That JOAN of ARC was a supernatural character, delegated by Heaven for purposes favourable to France.

2. That she was a being pre-eminently atrocious, acting in concert with Satanic power.

3. That she was a patriot, devoted to the welfare of her native land, of great mental energy and endowments, and a fit instrument whereby State policy might effectually work on the enthusiasm of her countrymen, in inciting them to deeds of daring valour, and, by acting on the superstitious fears of their enemies, exorcise their bravery, paralyze their exertions, and neutralize their success.

ROGER BACON.—A.D. 1214.

In times of great ignorance, every one whose knowledge far surpasses that of the generality, is of course regarded as having connexion with the infernal powers: for, unable to comprehend the methods employed either in the attainment of science, or to detect the means which produce striking, unexpected, and extraordinary effects, the vulgar mind flies to Art Magic as an easy solution of incomprehensible acquirements and unintelligible experiments: or rather, of acquirements not comprehended, and experiments not understood.

Of these, certainly, Roger Bacon belongs to the highest class: and although his powerful mind was not proof against the witcheries of Alchemy, the fascinations of Astrology, the enchantments of divination and prognostication, the seductive search after the transmutation of metals, or the elixir of gold for the indefinite prolongation of human life, yet it is rather to be wondered at that he wasted so little of his time and attention on these delusive subjects, than that he should pursue them at all.

This extraordinary character was born at Ilchester, A. D. 1214, and studied at Oxford, where a high Tower (shown in the Engraving introduced in this article) was standing within these few years, called ROGER BACON'S TOWER, or Study, and which was supposed to have been the seat of his experiments. He prosecuted his studies with so much ardour and success, that he gained the esteem and patronage of the greatest men in that University.

Having spent some years there in the study of languages, logic, and other branches of philosophy, he went to Paris, according to the custom of those times; as there the greatest scholars in Europe resided, studied, and taught: and where he received the greatest attention and encouragement from his countrymen, many of whom lived there. Among them was Robert Grouthead, or, as the French called him Grossteste, afterwards Bishop of Lincoln, who became his great and most efficient patron and singular good friend.

While he possessed such advantages, he endeavoured to improve them with the most indefatigable and eager application, not confining his attention to any particular branch of literature, but endeavouring to embrace the sciences in general, not slightly or superficially, but fully, perfectly, and thoroughly.

He returned to Oxford in 1240, and entered into the Franciscan order of Monks in that city, in order that he might prosecute his studies with perfect tranquillity. He speedily distinguished himself by his attainments, and was regarded by his learned contemporaries as one of the ablest



FRIAR BACON'S STUDY, OXFORD.

and most indefatigable inquirers after knowledge that the world had ever produced.

In order to obtain information at the fountain head, instead of subjecting himself to be led astray by imperfect translations, he made himself a perfect master of Greek, then a most rare acquisition. Not contented with this, he applied himself to the study of nature and nature's laws, and engaged in a course of laborious, expensive, and well-conducted experiments, as the only means of arriving at certainty, and of making useful discoveries.

By the generosity of his friends and patrons, he was enabled to expend on his various experiments in the course of twenty years, no less a sum than two thousand pounds, which, if the alteration of the standard of the coin, and the relative value of money in our days, are taken into calculation, is fully equal to thirty thousand pounds of the present monetary system. This was a stupendous sum to be so expended: but, probably, no equal sum so disbursed ever was of greater benefit to mankind: his useful and surprising discoveries in Astronomy, Physics, Optics, Mechanics, Chemistry, Geometry, and other Sciences, were no doubt greater in number and importance than have ever been made by any other individual.

But the discoveries of Friar Bacon cannot be limited to a few lines: whatever he was as an Astronomer, a Natural Philosopher, a theoretical Optician, a Mechanist, a Student of Chemistry, or a proficient in the Exact Sciences, his character as a MAN, as a HUMAN BEING, was the most important, the most interesting.

We shall, therefore, conclude this part of the subject by noticing his discovery of the composition and effects of GUNPOWDER, and his concealment of that discovery, no doubt from motives of humanity, foreseeing the dreadful results which he feared would accrue to the human race if its mode of fabrication were explained.

In his works, he first describes the effects of the explosion of GUNPOWDER: but as this would not have been fully sufficient to appropriate the discovery to himself, and might have been regarded by his future readers as mere rhodo-

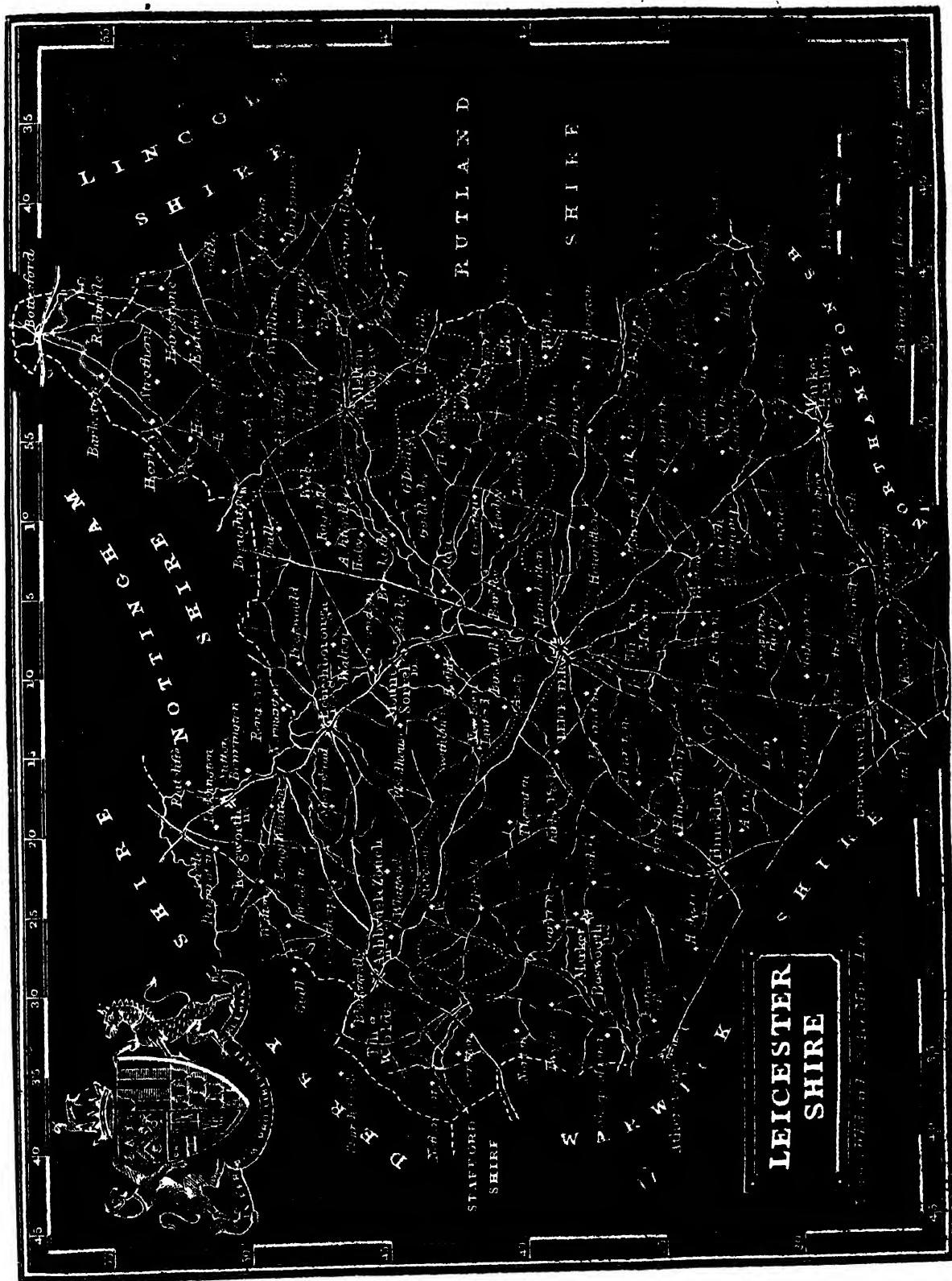
montade, he gives, with pardonable vanity, so clear a direction for making the article, but so enveloped in mystery, that while it certified him as the inventor, it completely hindered any fatal results from its being put into practice.

In describing the effects produced by this chemical composition, he says, " Sounds like thunder and flashes of light may be seen in the air, and even with greater horror than those which are made by nature: for a small substance, properly prepared, about the size of a man's thumb, makes a horrible noise, and produces a dreadful flash; and by this a city or an army may be destroyed in several different ways."

But, in order to prove his right to this discovery, should others ever happen on the same results, he specifies unintelligibly the ingredients of which this dreadful thundering and flashing composition is made:—" You may make this thunder and corsication, of Saltpetre, Sulphur, and *Luru mope canubre*, if you understand the art of compounding them." (We need not say that he wrote in Latin.) These incoherent unmeaning words, *Luru mope canubre*, were the stumbling-block of all his readers and commentators; and it was not until after the same discovery had been made by Berchtold Schwartz, a century later, that the above words were ascertained to be an anagram of the expression, " *Carbonum puluere*," — "the Powder of Charcoal:" these three substances being the component parts of GUNPOWDER. Thus, while he appropriated to himself the discovery, he completely obviated the dreadful effects which he supposed would result from its being made known.

We shall close this part of the Memoir of Roger Bacon by proposing for the reader's consideration a solution of this question:—

" Whether mankind owes more praise to that eminent character on account of his astonishing discoveries;—or, on account of his concealing, from motives of humanity, the most astonishing discovery ever made by mankind?"



LEICESTERSHIRE.

GENERAL DESCRIPTION AND HISTORY.

This County is included in the Province of Canterbury and Diocese of Lincoln, is an inland County, and in the Midland Circuit.

On the North it is bounded by Derbyshire and Nottinghamshire; on the East by Lincolnshire and Rutlandshire; on the South by Northamptonshire; and on the West by Warwickshire and Derbyshire.

It must be regarded as an agricultural County, not having any very prominent manufactures, except of Stockings, of which article great quantities are fabricated.

Its greatest length, from the south of Lutterworth to the north part of the Vale of Belvoir, is about forty-five miles; and its greatest breadth, from Netherseal in the West to Wymondham or Easton Magna in the East, is upwards of forty miles. It contains about 816 square miles, and 522,000 acres: the number of persons to a square mile is 216.

This County takes its name from its principal town, derived from the Saxon *Lercestershyre*, the *Shire of the Castle on the Lar*, which was the ancient name of the river *Nore*.

Previous to the Roman Invasion, this province was inhabited by the *Centani*: under the Romans it was included in the district called by them *Flavia Caesariensis*.

Under the Saxon Heptarchy it formed part of the Mercian Kingdom.

SOIL, CLIMATE, AGRICULTURE, &c.

As there are neither lofty mountains nor marshy and unhealthy bogs in this county, the climate generally is mild and temperate: the highest spots in the county are some of the peaks in Charnwood Forest; their elevation is not more than nine hundred feet above the level of the sea, yet they have a very wild appearance, projecting abruptly from the surface of the ground.

The Soil of the district is divided into Clay Loam,—Sandy and Gravelly Loam,—and Meadow Soil, a compost of Peat, the residuum of drainings long ago effected, and the sediment brought down from the uplands by the rivers and streams.

The general appearance is interesting and varied; the hills and vales connect with easy slopes, nearly the whole surface being practicable and useful.

Wheat, Barley, and Oats, are grown to a considerable extent, and Beans in prodigious quantities; this has been from time immemorial, as may be judged by this circumstance, that there is a village in the County called *Burton-in-the-Beans*.

The Leicestershire breed of cattle is the long-horned: to Mr. Bakewell of Dishley Farm, near Loughborough, the Agriculture of the Kingdom is greatly indebted for the astonishing improvements effected by him in this respect: some idea may be formed of the estimation of his stock by the circumstance of one of his Bulls selling for One Thousand Pounds. In fact, he produced a race, which is called, by way of distinction, the *DISHLEY BREED*.

This breed, in addition to its other good qualities, is kept in good condition with a smaller quantity of feed than any other of equal weight.

The famous new Leicester breed of sheep is hornless, broad, straight, and long-backed, square in the flank, short-legged, and long-woollen: it is prized for its great aptitude to fatten in a short time, and for the superiority of its flesh.

PRINCIPAL TOWNS.

Leicester, the county town, 96 miles from London, is also the largest, best built, and most populous town in the province; and as to its traditional antiquity, its foundation goes far back into the ages of romance and fable: King Leir, from whom it may be supposed to derive one of its ancient names (*Leir-caester*), is said to have reigned eight hundred and fifty years before the common era: his history, and that of his daughters, Goneril, Regale, and Cordelle, form the groundwork of one of Shakspeare's most celebrated dramas.

It certainly was built long before the arrival of the Romans: the principal variations of its name appear to have been *Cær-Leir*, or *Caer-Lerion*, *Leip-caester*, *Lege Cestria*, *Legorona*, *Legro-estor*, *Ledcestre*, *Leger-ceaster*, and *Leicester*. Camden affirms that the Romans also named it *Rata*.

Some writers state that there were anciently in Britain twenty-eight *Flamines*, under the control of three *Archiflamens*, who were located in twenty-eight cities.

These ecclesiastical districts, it is said, were on the introduction of Christianity, constituted into Bishops' Seats; and Ninian, the Monk of Bangor, who wrote in the Seventh Century, gave a particular account of these cities, one of which was *Caer-Lerion*.

From the various remains of Roman Antiquities discovered here, there can be no doubt of its having been a considerable station, as is also proved by a *milliare*, or ancient mile-stone, reckoning the measurement of the road from this town, tessellated pavements also, and the foundations of large buildings, have frequently been discovered.

The houses of this town are principally disposed in three parallel streets, intersected by several small ones; at the time of the Norman Conquest there were six churches; in 1220 there were nine churches: at present there are only five: there are several chapels for different denominations of Dissenters; under which title we presume we must include that erected in 1808 for the society of "Episcopalian Baptists."

There is also a Free School of great antiquity, a Green Coat School, St. Mary's School, St. Martin's School, and others. An Infirmary was built in 1771; an Asylum for Indigent Lunatics; a County Jail, a Tower Jail, a Marketplace, an Exchange, and other public Institutions.

The Corporation of *Leicester* consists of a Mayor, Recorder, Sheriffs, Bailiff, twenty-four Aldermen, forty-eight Common Councillors, a Town Clerk, and other officers: its freemen are toll-free in all Markets and Fairs in England. It sends two Members to Parliament, which privilege commenced 23rd Edward I. The Town is said to have been built 844 years before the Christian era: the Walls were built A.D. 914; the Abbey was founded 1143; the Charter was granted 1207: the first Mayor was chosen 1258; and Parliaments were held here in 1490, 1491, and 1495.

The carding and spinning of wool, and manufacturing it into stockings and other hosiery articles, is the chief business of *Leicester* and its neighbourhood. The goods are partly for home consumption, partly for direct export. The Canals which join the *Trent* to the canal navigation of *Leicester*, have furnished the benefit of communication to this town to the greatest advantage.

Ashby-de-la-Zouch is a small market town, pleasantly situated in a fertile vale, on the borders of Derbyshire, on a small river called the *Gilvershaw*. It consists principally of one street: is governed by a Constable and two Headboroughs; is famous for good ale; has a considerable malt-

ing trade, and a well-supplied market on Saturdays, and four annual fairs.

Belvoir Castle, three miles north of *Croxton Kyriell*, has been the splendid seat of the Manners family for several generations. It came into the Manners family by the marriage of Eleanor, eldest sister of Lord Ros, who died without issue in 1508. It is built in a most romantic manner on the abrupt elevation of a kind of natural cliff. This magnificent mansion is certainly situated on the site of a very ancient fortification. It has been repaired, or rather rebuilt, of late years, at a most enormous expense.

Robert de Todenci, the first Norman lord, who died in 1088, was in possession of fourscore lordships, many of which, by interrupted succession, continue to this day the property of the Duke of Rutland.

Billesdon, 98 miles from London, is a small market town, with a market on Fridays.

Hallaton, 91 miles from London, is a small market town with a large handsome Church; a Charity School was established here in 1707 by the benefaction of a lady: the Market is held on Thursdays.

Hinckley is a considerable market town close to the borders of Warwickshire, from which it is separated by Roman Watling-street road. Several tessellated pavements have been dug up here; and a wall called the Jury Wall, is supposed to have belonged to a temple of Janus.

The Parish Church is supposed to date from the thirteenth century; there are several Chapels for Dissenters.

The Civil Government is vested in a Mayor, Constables, and Headboroughs. The Market is held on Mondays.

A larger quantity of Hose is supposed to have been made here than in any other town in England.

Loughborough, 108 miles from London, may, from its extent and population, be regarded as the second town in the county. In the times of the Saxons it was a royal village. The church is a noble pile of building. There is a Free Grammar School, and a Charity School for 80 boys and 20 girls. There are several Dissenting Chapels.

The principal manufactures are, hosiery, wool-combing, and frame-work-knitting, and the town has been greatly advantaged by the navigable canal which communicates with the *Union Canal* and the *Soar Navigation*.

Dishley, which is a small village about two miles from *Loughborough*, has been rendered celebrated in the annals of agricultural science by the successful experiments of Mr. Bakewell, (in the improving the breed of Horses, Cattle, and Sheep,) who devoted an active and industrious life to a laudable profession, which proved a source of great profit and pleasure to him: he died in 1795.

Lutterworth, 89 miles from London, is a market town, on the banks of the *Swift*. The principal manufacture is Cotton goods and Stockings: the Market is on Thursdays. The Church is a large handsome building. The pulpit is preserved with great and praiseworthy veneration in memory of the illustrious *WICKLIFFE*, the day star of the *Reformation*, who was Rector of this place, and died here in 1387 of a palsy which seized him at mass, at the moment of the elevation of the Host.

He was buried here: but his doctrines having been honoured by the condemnation of the Council of Constance, his bones were taken from the grave after forty years interment, and after being burnt, were thrown into the brook.

WICKLIFFE was in Religion what *ROGER BACON* was in Science; the great detector of those arts and glosses which the crafty barbarism of ages had heaped together to obscure the mind of man, and to hinder its perception and reception of TRUTH.

Market Bosworth, 107 miles from London, a small town, pleasantly situated on an eminence. It had formerly a considerable market, as its name implies, but it is now greatly reduced.

About three miles south-east from this town is a large plain, now enclosed, anciently called *Redmore*, but afterwards *Bosworth Field*. Here was fought the famous battle between Richard III. and the Earl of Richmond, afterwards Henry VII., in which the former lost the battle, his crown, and his life.

The issue of this sanguinary engagement tended to unite the two rival families of York and Lancaster, afterwards completed by marriage; those contentions had kept the nation in a continued succession of wars, hostilities, and personal bitter animosities, from the beginning of the reign of Henry VI. to the decease of Richard III.

Market Harborough, 83 miles from London, is a respectable, well-built town, situated on the north bank of the *Welland*, at the southern extremity of the county. This town has a strong claim to Roman antiquity; near it is a Roman encampment, and Roman masonry and pottery have repeatedly been discovered in its vicinity.

The market is on Tuesdays. The chapel is said to have been built by John of Gaunt: there are several Meeting-Houses.

This town is a very great thoroughfare, as the mail-road from *London* to *Leicester*, *Nottingham*, *Derby*, *Manchester*, and other parts of the kingdom, passes through it.

Melton-Mowbray is a small well-built market-town, 105 miles from *London*, situated in a vale, on the banks of the little river *Eye*. It has a large handsome church. The poor are benefited by many charitable bequests: there is a large free school for girls.

Mount-Sorrel is a small market-town situated in the parishes of Barrow and Rothley. Its original name, according to Camden, was *Mount Soar Hill*, from its being built on a steep, craggy hill on the river *Soar*.

RIVERS AND CANALS.

RIVERS.—Leicestershire is well watered by Rivers, Brooks, and Rivulets. The principal one is the *Soar*, which rises between Hinckley and Lutterworth, and passing by Leicester and Loughborough, falls into the Trent near Sawley in Derbyshire: it has been rendered navigable from its junction with that River to several miles above Leicester.

The *Swift* rises in this county, and, passing by Lutterworth, soon leaves it, and flows into Warwickshire.

The *Avon* divides the south-west part of the county from Northamptonshire.

The *Wreake* rises in the eastern part of this county, and, passing by Melton-Mowbray, falls into the *Soar* near Mount-Sorrel.

The *Anker* rises near the source of the *Soar*, and running north-west near the confines of this county and Warwickshire, falls into the *Avon*.

Besides these Rivers there are numerous Brooks and Rivulets, on whose banks, as well as on those of the Rivers, there are large breadths of meadow-land of exuberant fertility.

CANALS.—The *Ashby Canal* is navigable from Ashby Wolds to the *Coventry Canal*; for nearly thirty miles it is without a single lock, being all on one continued level: a reservoir of thirty-six acres has been formed on the Wolds; being filled by the winter rains and snows, it is gradually dealt out in summer. This canal, in all its branches, is fifty miles in extent, with 252 feet fall in the whole.

Leicester Navigation, near the line of the *Soar*, and

sometimes along its channel, passes from the county-town down the *Soar Valley* to the *Trent*, with a collateral branch to Loughborough, continued by Canal or Railway over part of *Charnwood Forest*, to *Cole Orton Colliery*, and the *Cloud Hills Lime-works*.

The *Melton Canal*, from the *Leicester Soar Navigation*, is carried along the valley of the *Wreck* to *Melton-Mowbray*, and continued to *Oakham*: it is proposed to extend it to *Stafford*.

Grantham Canal runs from the *Trent* along the *Vale of Belvoir*, to *Grantham*. This *Canal* is of great importance to that *Vale*, where the roads in winter are very bad.

The *Union Canal* joins the *Soar Navigation* near *Leicester*, passes *Ayleston*, *Glen Parva*, *Wigston*, *Newton*, *Harcourt*, *Wistow*, and *Saddington*, where there is a Tunnel of forty chains; it then passes *Foxton*, where is another Tunnel of forty-eight chains, with a branch to *Market Harborough*: it then passes, over the *Welland*, by *Marston*, *Trussell*, *Hothorpe*, *East Farndon*, and *Oxendon Magna*, where there is another Tunnel of eighteen chains, and also a reservoir for the summit level, supplied by the *Oxendon Brook*. It then passes *Kelmarsh*, with a Tunnel of forty-five chains; it finally joins the *River Nene Navigation*, which communicates with the *Grand Junction Canal*, completing a course of nearly forty-four miles, from *Leicester* to *Northampton*, with 408 feet of lockage, and four Tunnels.

The *Oakham Canal* commences at the *Melton Navigation* near *Melton*, and joins the town of *Oakham*, after a course of fifteen miles.

REPRESENTATION OF LEICESTERSHIRE.

Members

COUNTRY—	North Division, (<i>Loughborough</i>)	2
	South Division, (<i>Leicester</i>)	2
TOWN—	<i>Leicester</i>	2
		Total 6
POPULATION	LEICESTERSHIRE.	
	Male. Females. Total.	
Framton, Hundred	8,538 8,659 ..	17,197
Gartree, Hundred	8,331 8,728 ..	17,059
East Goscote, Hundred	9,343 9,427 ..	18,770
West Goscote, Hundred	23,572 23,740 ..	47,312
Guthlaxton, Hundred	11,251 11,340 ..	22,591
Sparkeenhoe, Hundred	17,563 17,607 ..	35,170
Leicester, Borough	18,958 19,906 ..	38,909
Total	97,556 99,447	197,003

OPINION OF THE ORIENTALS AS TO WINE.—“ When Noah planted the first vine, and retired, Satan approached, and said, ‘ I will nourish you, charming plant ! ’ ”

‘ He quickly brought three animals, a Lamb, a Lion, and a Hog, and killed them one after the other near the vine.

‘ The virtue of the blood of these animals penetrated it, and is still manifest in its growth.

‘ When a man drinks one goblet of wine, he is then agreeable, gentle, and friendly ; that is the nature of the Lamb.

When he drinks two he is as a Lion, and says, “ Who like me ? ” he then talks of stupendous things.

‘ When he drinks more, his senses forsake him, and at length he wallows in the mire.

‘ Need it be said that he then resembles the Hog ? ”

THE CINQUE PORTS.

As these towns are chiefly in Kent, they are described here, as most properly appertaining to the description of that County.*

This expression, literally “ THE FIVE HARBOURS,” is a name bestowed collectively on the following Ports, namely, *Hastings*, *Sandwich*, *Dover*, *Romney*, and *Hythe* (of these the last four are in Kent). These five towns were formerly of the greatest importance among those which lie opposite to the coast of France ; for at a distant period their depth of water was certainly much greater than it now is, and as the Navy then consisted of ships of far less burden than those now built, they possessed a value which has long since departed. *Rye* and *Winchelsea* were subsequently added, but the appellation remained unaltered.

The necessity of protecting these shores from foreign invasion was acknowledged in early times, and the best and most efficacious method was soon found to be our maritime superiority.

The establishment of regular military stations on the coast of Kent may be traced as far back as the time of the Romans, who placed the whole under the superintendence of one principal officer ; it is highly probable that they adopted this arrangement from the example of the Ancient Britons, whose prompt appearance on the coast, awaiting the arrival of the expected invaders, can only be attributed to some permanent arrangement of pre-appointed signals.

It is probable, therefore, that the incorporation of the CINQUE PORTS is derived, at least in principle, from the remotest antiquity : but the formation of this constitution was a work of slow progress ; and antiquarians are not decided whether these Ports were first incorporated by Edward the Confessor or William the Conqueror.

It is certain that they are not named in their collective arrangement in the *Domesday Book* ; yet King John, in a Charter granted to them, expressly says that the “ BARONS or THE PORTS” had at that time in their possession Charters given them by most of the preceding Kings, as far back as Edward I.

In return for many valuable privileges granted to the CINQUE PORTS in the times of our early monarchs, they were required to render the important service of fitting out fifty-seven ships, with a crew of twenty-one men and a boy in each, with which they were to assist the State for fifteen days at their own expense : if kept longer, they were paid by the King. The size of the vessels may easily be inferred from their complement of hands.

It is true that although the changes which in lapse of time have taken place in the naval force and arrangements of this nation, have now rendered the maritime services of the CINQUE PORTS of no importance, yet, during a long period, those services were of the most eminent utility. Manned by hardy seamen, well accustomed to the tides and currents and sands and peculiarities of both coasts, probably no equal number, either of vessels at that period in use, or of mariners, could cope with them.

During many reigns, the fleets fitted out by the “ PORTS” formed nearly the whole of the Royal Navy, and they were engaged in many splendid actions. By the assistance of the Ships and Mariners of these havens, John recovered his kingdom after he had been obliged to fly to the Isle of Wight : and soon after Robert de Burgh, with “ forty tall schippes” belonging to the CINQUE PORTS, defeated a

* This article was intended to follow the Description of the County of Kent.—See page 463.

French fleet of eighty sail, which was bringing reinforcements to Louis the Dauphin.

In Edward III.'s reign the shipping of the *Cinque Ports* was of great use in conveying the armies of that warlike Monarch to France, and also in protecting our own coasts; and in the reigns of Henry VII. and VIII., the "Ports Navy" was several times employed for similar purposes.

The offices of *Lord Warden of the Cinque Ports*, and *Constable of Dover Castle*, are now constantly united in the same person; but they were originally held distinct. The Members for these Ports are styled *Baronies*; and it appears that in former times they enjoyed superior dignity, and ranked among the nobility of the kingdom. They are now entitled to carry the canopy over the Monarch at his Coronation.

THE TAME SWAN, OR, MUTE SWAN.

(*Cygnus cygnus mansuetus*.—Linnæus.)

The plumage of this species is of the same snowy whiteness as that of the Wild Swan (p. 40*), and the bird is covered next the body with the same kind of fine close down; but it greatly exceeds the Wild Swan in size, weighing about twenty-five pounds, and measuring more in the length of the body and extent of the wings. This also differs in being furnished with a projecting, callous, black tubercle or knob, on the base of the upper mandible, and in the colour of the bill, which is red, with black edges and tip; the naked skin between the bill and the eyes is also of the latter colour; in the Wild Swan this bare space is yellow.

The manners and habits are much the same in both kinds, particularly when they are in a more secluded or wild state; for indeed this species cannot properly be called completely domesticated; they are only as it were partly reclaimed from a state of nature, and invited by the friendly and protecting hand of man, to enliven and embellish the artificial lakes and pools which beautify his pleasure grounds. On these the Swan can scarcely be accounted a captive, for he enjoys all the sweets of liberty, combined with the complete safety and ample sustenance of domestication.

Placed there, as he is the largest of all British birds, so is he to the eye the most pleasing and elegant. What in nature can be more beautiful than the grassy-margined lake, hung round with the varied foliage of the grove, contrasted with the pure resplendent whiteness of the majestic Swan, by the gentle breeze wafted along with outspread plumes, or, securely floating, his elegant and sweeping contour brightly reflected on the glassy surface of the water, while he throws himself into numberless graceful attitudes, as if desirous of attracting the admiration of the spectator?

The Swan, although possessed of the power to fly, yet molests none of the other water-birds, and is singularly social and attentive to those of his own family, which he carefully and boldly protects from every insult. While they are employed in the cares of the young brood, it is not safe to approach near them, for they will fly upon a stranger, whom they often beat to the ground by repeated blows, and they have been known by a single stroke of the wing to break a man's leg. But however powerful they are with their wings, yet a slight blow on the head kills them.

The Swan for ages past has been protected on the River Tyne as royal property, and it continues to this day to be accounted felony to steal their eggs. "By this means their increase is secured, and they prove a delightful ornament to

that noble river." Latlam says, "In the reign of Edward IV., the estimation they were held in was such that no one who possessed a freehold of less than the clear yearly value of five marks was permitted even to keep any."

In those times, hardly a piece of water was left unoccupied by these birds, as well on account of the gratification they gave to the eye of their lordly owners, as that which they also afforded when they graced the sumptuous board at the feasts of that period; but the fashion of those days has passed away, and Swans are not nearly so common now as they were formerly, being accounted a coarse kind of food, and consequently held in no estimation; but the Cygnets (so the young Swans are called) are still fattened for the table, and are sold very high, commonly for a guinea each, and some times for more; hence it may be presumed that they are better food than is generally imagined.

This species is said to be found in great numbers in Russia and Siberia, in a wild state. They are common on the River Trent, without an owner; and on the salt-water inlets of the sea near Abbotsbury in Dorsetshire; they are also met with in a wild state on other rivers and lakes in different parts of the British Isles.

It is the generally-received opinion that the Swan lives to a very great age; some say a century, others have protracted their lives to three hundred years. Strange as this may appear, there are persons who credit it. This extraordinary longevity, probably, originates only in traditional tales, or in idle unverified hearsay stories, as no one has yet been able to say with certainty to what age they attain.

The female makes her nest concealed among the rough herbage near the water's edge; she lays from six to eight large white eggs, and sits on them six or eight weeks before they are hatched. The young do not acquire their full plumage until the second year.

It is found by experience that the Swan will not thrive when kept out of water: when confined in a court-yard, he makes a very awkward figure, and soon becomes dull and spiritless; his snowy-white plumes lose all their brilliant luster, and he becomes almost the reverse of his former self.

ROGER BACON AND HIS STUDIES.

It has already been observed,* that the pecuniary expenditure of Bacon in his experiments was extremely great. Of his discoveries, that of Gunpowder has already been alluded to; but it should seem that some of his inventions, in the course of time, were lost; otherwise, certainly, England would claim the invention both of telescopes and microscopes.

We shall now quote a passage whereby the principle of the Telescope is accurately described, although we can plainly infer from it that the instrument described did not possess the portability and utility of our modern instruments.

"SPECTRA" (or spying glasses), says Friar Bacon, "may be erected on a rising ground, opposite to cities and towns, in such a manner that all things done by the enemy may be discovered; and this may be done at any distance we please.

"For, according to the laws of OPTICS, an object may be viewed through as many glasses as we think fit, if they are properly placed; and they may be placed, some nearer, and some more remote, so that the object may be seen at any distance we desire.

"Spying glasses may be so formed, and so placed, that

* See "Guide to Knowledge," page 490.

we shall be able to read the smallest letters at an incredible distance, to number even the dust and sand, and to make the Sun, Moon, and Stars, to descend, or at least to seem to descend, from heaven." The principle of the Microscope seems evidently alluded to in this extract.

In his admirable treatise *De Scientia Perspectiva*, he explains at length and perspicuously the theories of Reflected Vision, or Cætoptrics, and of Refracted Vision, or Dioptrics, as well as of Direct Vision, or Optics: from these theoretical data, he has deduced many useful inventions.

Among others, Reading Glasses are thus plainly described:—" If a man view letters, or other small objects, through the medium of a crystal or glass, which is the lesser portion of a sphere, whose convexity is towards the eye, he will see the letters much better, and they will appear to him larger. This instrument is useful to old men and to those that are weak-sighted, because by it they may see the smallest letters of sufficient magnitude."

The expensive character of his experiments has already been hinted at: we shall conclude this part of our notice of Roger Bacon's studies by remarking the costly nature of the lenses which he caused to be made, and which may be contrasted with the facilities of acquiring scientific instruments now, when, for a few shillings, the tyro may obtain a complete microscope or telescope, the expense of which, in Bacon's time, even in an imperfect state, could only be obtained by an enormous outlay. We premise that the value of money in those days, as compared with our own, was about fifteen to one.

" I have caused many burning glasses to be made, in which, as in a mirror, the goodness of nature may be displayed. Nor are they to be accounted too expensive, when we consider the wonderful and useful things they can perform.

" The first I got cost me sixty pounds of Parisian money, equal to about twenty pounds sterling: but afterwards I got a better one made for ten Parisian pounds, or five marks sterling: and since I have become more expert, I have discovered that better ones may be made for two marks, nay, for twenty shillings, or even cheaper."

In a word, there is abundant evidence in his works to prove that this wonderful man was acquainted with the construction of many, if not of all the different kinds of instruments for examining or viewing objects to advantage, which have been the means of obtaining great honour for those scientific men, who, in later times, have been regarded as the inventors.

LAVATER IN DOMESTIC LIFE.

IT too frequently occurs that persons whose characters for moral excellence are irreproachable, are not equally exemplary in their general tempers and familiar deportment, often permitting pettishness, impatience, irascibility, and an unbecoming inattention to the feelings of others, to mar that uniformity of excellence which ought to be the aim of every one to possess and to exhibit.

The estimable character of Lavater has already been exemplified in a favourable point of view, in his benevolent conduct to the poor widow. (See page 455.)

The following account of an interview with this amiable and consistent character is translated from the Journal of M. Karanisin, a Russian Nobleman:—

" When I had rung the bell, there appeared a tall slender

man of a pale complexion, whom I instantly knew to be Lavater. He conducted me to his closet, and welcomed me to Zurich.

" After a few questions about my journey, he said, ' Have the goodness to call again. I am busy at present; or stay and read, or look over anything you please, and do just as if you were at home.'

He then showed me some folios in his book-case, lettered *Physiognomical Cabinet*, and left the room. He returned several times to fetch some book or some paper, but immediately left the room again. At length he entered it, took me by the hand, and conducted me to a company of literati.

" Lavater has an extremely venerable appearance; a firm resolute air; a long pale face; piercing eyes, and a very grave look. All his motions show animation and agility, and he utters every word with energy. In his tone there is something dictatorial, which is probably a consequence of his profession, but it is corrected by a look of the most undissembled candour and simplicity of heart.

" When I called the next day, I found Lavater writing a letter. In half an hour the room was filled with visitors. These visits would be troublesome to any other person; but Lavater told me that he was fond of seeing strangers, and that he learnt many new things of them.

" Early the next morning he sent to invite me to go with him and a few friends into the country. We sat down to a plentiful repast, and joked and laughed. After dinner we sat down to play—not at cards.

" Each took a piece of paper, upon which he wrote any question that came into his head. The papers were then mixed, again distributed, and every one had now to answer to the Question he had received, and write down a new one.

" This game continued until the piece of paper was full, and then they were all read aloud. Many of the Answers were well adapted to the subjects; but those of Lavater differed from the rest, as the moon from the stars. As an example I will annex a few of his Questions and Answers.

" Question. Who is the real benefactor? Answer. 'He who relieves present distress.' * The Question, 'Is the life of any particular person absolutely necessary for the completion of any particular purpose?' was answered in the following manner: 'It is necessary, if he remains alive; but would be unnecessary were he to die.' Different words without any connexion were then given, and each had to make sense of them, which gave occasion to a good deal of amusement and laughter."

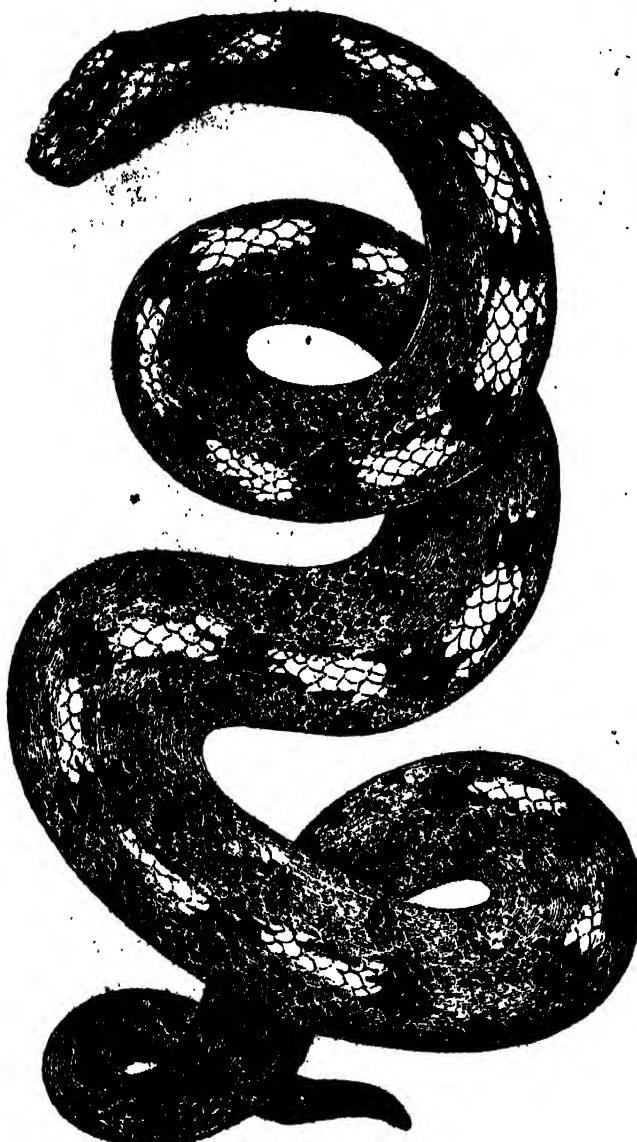
Such were the recreations of the pious Lavater, who fell amidst the horrors of war. Should so benevolent and peaceable a man have expected a death so cruel in his native city?

PHYSICIANS.—Addison (let us hope with more wit than correctness) compares Physicians to the Ancient Britons:—

Some lay on foot, and some in chariots. If the infantry do not so much execution as the cavalry, it is because they cannot convey themselves with so much velocity into all quarters, and dispatch their business in so short a time."

* This Answer, exhibiting the **THORY OF RIGHT PRINCIPLES**, is beautifully and emphatically illustrated by the conduct of Lavater as detailed in the quotation alluded to (page 453), while the **PRACTICE OF RIGHT CONDUCT** is in strict accordance with the abstract dictum here detailed.

It is right to add, that the anecdote of LAVATER AND THE WIDOW was received from an authority wholly unconnected with that whence this Question and its Answer are derived.



THE ABOMA, THE BOA, THE BOA CONSTRICTOR, THE GREAT BOA, THE BOIGUACU.

This serpent, which bears in different places the above different names, is the largest species of that tribe of animals with which we are acquainted on credible testimony. It is commonly thirty feet in length, but some specimens have been estimated at forty, and even at fifty feet.

The hissings of this creature are long, sharp, and frightful; they are supposed to be the precursors of storms, tempests, and pestilential disorders, which may arise from the impure state of the atmosphere.* Therefore these have terrified the superstition of many barbarous nations.

The natives of Mexico considered this tremendous reptile

* We know that many animals among us exhibit symptoms of great excitement previous to changes of the weather.

as a messenger of Divine Wrath, and torrents of human gore have been offered to appease his anger. In Africa also, on the coast of Mozambique, and in Japan, he is no less terrifically worshipped. This may in some degree account for the superstitious terror of the Negroes in Barbadoes, noticed in the following account, as they might have had among them some traditional tales of their father-land.

The Boa inhabits all countries sufficiently hot to maintain him, fertile enough to furnish him with prey, so spacious as to prevent his being molested, and remote from the intrusion of the human race. In ancient times, it was found near the shores of the Mediterranean. The monsters which were destroyed by the engines of the army of Regulus, the Roman general, are supposed to have been of this species.

His head in some degree resembles that of the Seal or the Dog; the summit is wide, the forehead is raised, and divided by a longitudinal hollow; his eyes are large, their orbits projecting; his mouth opens very wide; his teeth are long.

He is distinguished by the beauty of the pattern in which his colours are arranged, which vary according to climate and species: but this is not a subject of verbal description; representation only can suffice.

This Snake sheds his skin after the rainy season. The egg from whence this monster issues is only two or three inches long, and is hatched by the sun's heat. In some countries they wear his skin for ornament and clothing; as did the heroes of antiquity.

There are several specimens of this reptile in England. We believe the most valuable one is that in the Zoological Gardens, Regent's Park.

BOA SERPENT IN BARBADOES.

The following account was sent over to England in the year 1813. The skill with which the animal evaded his pursuers, and "the wisdom" with which he took precaution against being surprised, is well worthy of notice: he appears to have been fully aware of the superiority of Man, and therefore to have dreaded him.

"A Serpent, of a species supposed to have been extinct for more than a century, was lately found on this island (Barbadoes).

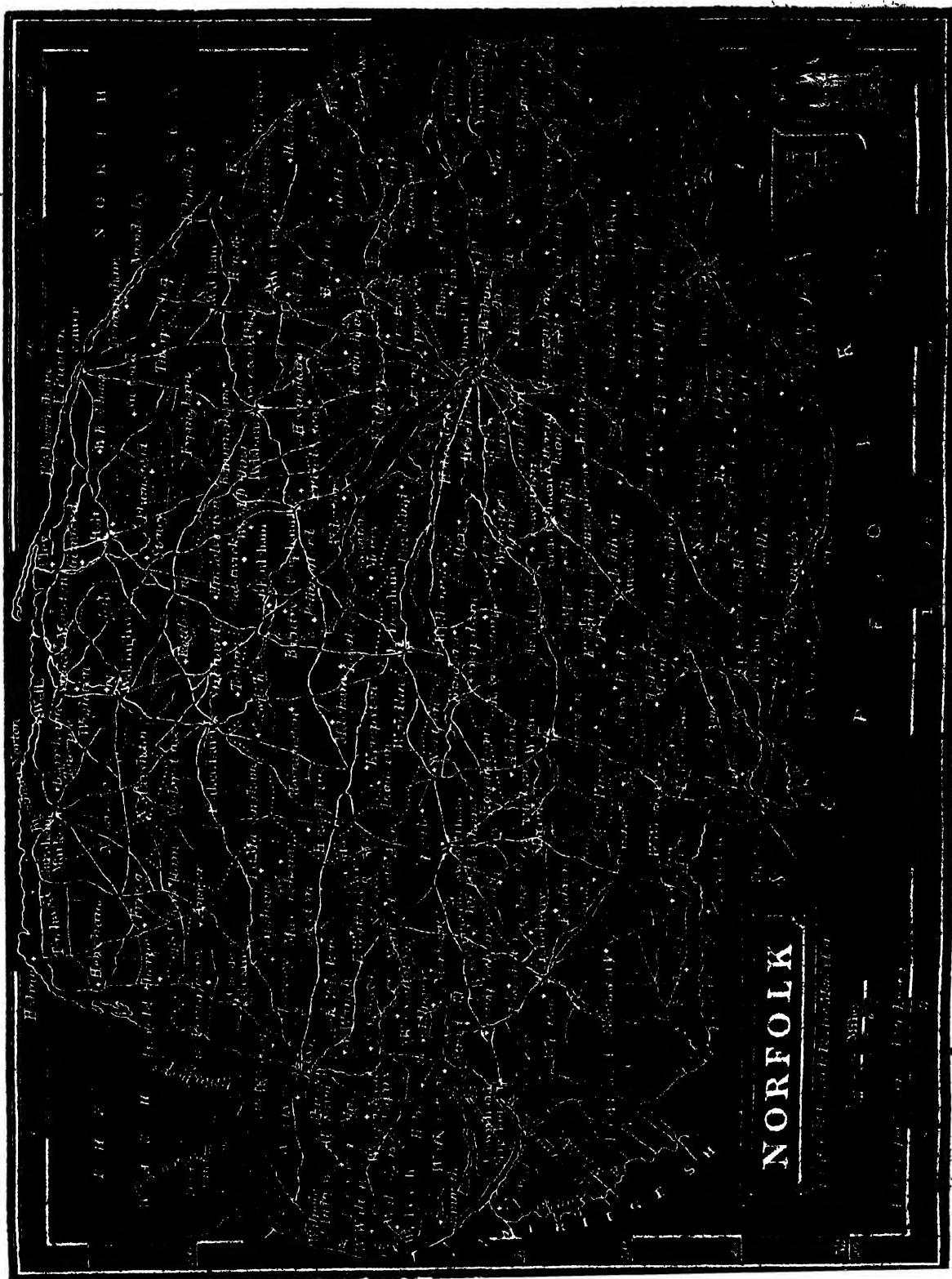
"It was twelve feet long, and two feet in girth, and had killed several head of cattle, by enfolding its body round their throats, and suffocating them: it displayed extraordinary sagacity in eluding search, never choosing a hiding-place which had not several openings remote from each other, and from some of which it always escaped.

"Its powers of mobility were incredible, distancing the swiftest dogs, and clearing, at a bound, a space of fourteen feet.

"Many of the Negroes, from the sagacity, swiftness, and courage, displayed by the animal, considered it as animated by an Evil Spirit, and began to regard it with veneration.

"It was killed eight miles from the place where it was first seen, and where it had strangled a heifer."

If this were a full-grown specimen, it is probably the smallest species of this animal hitherto described.



Mr. PINNOCK wishes respectfully to announce, that, for some time past, he has not conducted or superintended the publication of this Work, and that, from the beginning until now, it never was entirely subject to his uncontrolled direction. It has now passed into other hands; and, in consequence, he has made such arrangements to get up the Work as shall give it a superiority over all the former numbers. To effect this, the Editor and Proprietors will not spare either labour or expense. They will avail themselves of the first literary talent of the day, so that the "GUIDE TO KNOWLEDGE" shall be so in fact, and not in name only.

* * * A further announcement will shortly appear.

NORFOLK.

This county received its name from its northern situation in respect to Suffolk. It was originally intended to express the northern people, or northern branch of the EAST-ANGLES.

It is bounded on the north and east by the German Ocean; on the west by Cambridgeshire; and on the south by Suffolk. It is about fifty-seven miles in length, thirty-five in breadth, and one hundred and forty in circumference.

Norfolk was anciently inhabited by the Iceni, and made part of the province of "Flavia Cæsariensis." Under the Saxon Heptarchy, it belonged to the kingdom of the EAST-ANGLES, but it is now included in the Norfolk circuit, the province of Canterbury, and diocese of Norwich. It is divided into thirty-one hundreds, and contains one city, and thirty-two market towns.

The air of this county is in general very healthy,—in winter sharp and piercing. Its surface for the most part, is level, with the exception of some gentle swells and depressions. At the western extremity of the county, adjoining the counties of Cambridge and Lincoln, is a considerable tract of fenny land, as there is also to the east of Yarmouth. Some few parts consist of heath, but, in general, this county is rich and fertile. Its roads, for the most part, are excellent; and its productions in corn, cattle, butter, wool, turkeys and other poultry, are found here in abundance. The agriculture of this county is very flourishing, and its inhabitants are reckoned very enterprising and industrious.

Its chief rivers are the great and smaller Ouse, the Yare and Waveney. The Yare, which is peculiar to Norfolk, flows through Norwich, and falls into the German Ocean at Yarmouth,—hence its name. The greater Ouse falls into the German Ocean below Lynn. The Nen forms the western boundary of this county, and falls into the Wash, in Lincolnshire. The Waveney joins the Yare a little above Yarmouth, and is navigable from Bungay. The Yare rises at Attleborough, and falls into the German Ocean at Yarmouth.

Its chief manufactures are woollens, worsted, and silk; and the Norwich stuffs form a very considerable article of commerce. This county gives the title of Duke to the noble family of HOWARD.

Its chief towns are Norwich, Lynn, Yarmouth, Diss, Fakenham, Holt, Castle Rising, Alesham, Swaffham, and Thetford.

Norwich, the capital of Norfolk, is an ancient and populous city, with an excellent trade. It formerly contained fifty-eight churches, but now only thirty-six, besides the cathedral, which is a large, venerable, and noble structure. The cathedral was founded in 1096, by Bishop Herbert, who laid the first stone. Norwich is seated on the side of a hill, on the river Wensum, which runs through it, and is navigable to Yarmouth. This city extends about three miles in length, and a mile and a quarter in breadth, and has six bridges over the river. Norwich was formerly defended by a wall, and forty strong towers, some remains of which are yet to be seen. The charitable institutions of Norwich are very numerous, and its theatre is large, and very commodious.

This city is supposed to have been founded by OFFA, king of the East Angles, about the year 575. It was burnt by SWEYN, king of Denmark, in 1004, but was afterwards rebuilt by his son CANUTE, about the year 1018. It is supposed to have risen out of the ruins of the Venta Icenorum, now a small village about three miles to the southward. The river Yare passes through it, and is navigable to Yarmouth. Norwich is sixteen miles from the sea; and it was noted for its castle, so long ago as the seventh century. And in the time of Camden, A.D. 1580, it was reckoned one of the most considerable cities in Britain, particularly for the industry of its inhabitants, their loyalty to their prince, and civility to foreigners, as well as for its wealth, number of people, and the neatness of its buildings.

In 1348, near 58,000 people died here of a pestilence; and in 1505, it was almost entirely consumed by fire. Though this city is very populous, containing 60,000, there is void enough in it for another colony. It adds much to the trade of Yarmouth, by the vast cargoes of coals, wine, fish, oil, and all other heavy goods, which come to it from thence by the Yare. Its manufactures are generally sent to London, though considerable quantities are exported from Yarmouth to Holland, Germany, Sweden, Denmark, Spain, and Portugal.

During the Saxon government it was the chief seat of the EAST ANGLES. At the time of the Norman conquest it was besieged, and by famine reduced to submit to the Conqueror. Norwich is 108 miles from London, 42 from Lynn, and 22 from Yarmouth.

Among the most distinguished natives were MATTHEW PARKER, a learned divine, and Archbishop of Canterbury. He was born in 1504. He died in 1575, aged seventy-two.—WILLIAM BATEMAN, founder of Trinity-hall, Cambridge.—JOHN COSIN, Bishop of Durham.—JOHN HAYE, or CATUS, an eminent physician, founder of Caius-college, Cambridge.—Dr. SAMUEL CLARKE, an eminent critic and divine; and the late EDWARD KING, an eminent antiquary.—BELOE, the translator of Herodotus; and Dr. CRATCH, a celebrated musical composer, were also natives of this city.

YARMOUTH, a celebrated sea-port, is so called from its situation at the mouth of the river Yare. Its foreign trade is chiefly to the Baltic, Holland, France, Portugal, and the Mediterranean. It also sends ships to the Greenland fishery. This port is the chief rendezvous of the colliers between Newcastle and London. It is particularly noted for herrings, upwards of 40,000,000 of which are said to be taken and cured in a year. It is 124 miles from London.

Though this town is not so large as Norwich, it is

vastly superior to that city in trade and wealth, by its commodious situation on the German Ocean. The seamen employed by the merchants here are reckoned the best in England.

This town was formerly the station of the packet-boats to and from Holland, till it was moved to Harwich. It also had several monasteries.

Yarmouth makes a very good appearance from the sea, and is the neatest, most compact, and the most regularly built town in England; the streets being straight, and, for the most part, parallel with one another, make it also sweet and healthy.

Yarmouth is particularly noted for its *market*, which, for its extent, is considered the handsomest in England; and its *quay*, which is 1016 yards in length, is the largest and most commodious in Europe.

Though Yarmouth Roads, on the east side of the town, are very safe, and the chief rendezvous of all the colliers between Newcastle and London, and other merchantmen, which are constantly passing and repassing, still the coast is particularly noted as one of the most dangerous and most fatal in all Britain. A melancholy instance of this happened about the year 1692, when a fleet of 200 sail of light colliers went out of Yarmouth Roads, with a fair wind, to pursue their voyage, and shortly after were taken with a storm of wind, at north-east; out of which only 60 vessels were saved, and the remainder, 140 sail, were driven on shore, and dashed to pieces, when nearly all the hands on board perished.

At the very same unhappy juncture, a fleet very heavily laden, coming from the north; also some coasting vessels, laden with corn, from *Lynn* and *Wells*, bound for *Holland*, most unhappily met with the same misfortune; so that, in the whole, upwards of 200 sail of ships, and above 1000 people, were lost in the disaster of that one miserable night.

Yarmouth is 124 miles from London, and 22 from Norwich.

LYNN, otherwise called *King's Lynn*, is situated on the *Ouse*, about ten miles from the sea. It is rich, populous, and flourishing, and has a considerable trade with *Holland*, *Norway*, and the *Baltic*, besides a share in the Newfoundland fishery. It is 96 miles from London.

The harbour at Lynn is about as broad as the river *Thames* at London-bridge; and the tide of the river *Ouse* rises about twenty feet perpendicular. The favourable situation of this town, at the mouth of so considerable a river, enables it to carry on a most extensive coasting and foreign trade.

In 1784, the annual duties collected at Lynn, amounted to more than those of any other port in the kingdom, except *London*, *Bristol*, *Liverpool*, and *Hull*.

It has a very extensive trade in corn, wine, coals, iron, deal, timber, and other kinds of merchandize; and it has also a very considerable foreign trade with *Holland*, *Norway*, the *Baltic*, *Spain* and *Portugal*. This was formerly a place of great strength, and at present it is, for the most part, surrounded with a wall and a deep trench.

Its original name, in the time of the Saxons, was *Len*. It formerly belonged to the Bishops of Norwich, and was then called *Bishop's Lynn*; but becoming, by exchange, the property of King Henry VIII., it obtained its present name, "King's Lynn."

ATTLBOROUGH, anciently a city, and capital of the county, had formerly a palace, and is still a place of very considerable note. *EDWARD RACK*, author of "*Mentor's Letters*," was born here. It stands on the road from

Thetford to *Norwich*, and is about twelve miles from each.

DEREHAM is rendered famous for having been the rectory of the sanguinary *BONNER*, afterwards Bishop of London. Here the celebrated poet *COWPER* was buried in 1800. *Dereham* is 9 miles from *Norwich*, and 101 from *London*.

THETFORD, formerly a place of great note, is now fallen into decay. It is noted as having given birth to *THOMAS PAYNE*, author of the "*Rights of Man*," "*Common Sense*," and the "*Age of Reason*." These works being published at a time when the Revolution in France had excited an extraordinary ferment in the public mind, Mr. *PITT* suppressed the first work by act of Parliament.

The Saxon kings made it the metropolis of the kingdom of the *EAST ANGLES*, but it was three times destroyed by the *DANES*. In the twelfth century it was a bishop's see; and formerly it had a mint, which produced a great number of Anglo-Saxon and English coins from the time of Athelstan.

It was formerly very populous; and in the reign of Edward III., it had twenty churches, six hospitals, and eight monasteries, most of which are now in ruins; and all the churches left are only two. The chief magistrate found here at the Conquest, was styled a consul; from whence it is supposed to have been a Roman station. *Thetford* is 80 miles from *London*, 28 from *Norwich*, and 12 from *Bury*.

BURNHAM THORPE, a small place, is famous for having given birth to *ADMIRAL LORD NELSON*, the hero of the *Nile*, *Copenhagen*, and *Trafalgar*.—He was born in 1758, and fell in his country's cause in the great victory off *Trafalgar*, in 1805.

Among the most distinguished natives of this county were *SIR THOMAS GRESHAM*, founder of the Royal Exchange, who was born at Gresham, near *Cromar*.—*SIR FRANCIS WALSHAM*, the great statesman, in the reign of *QUEEN ELIZABETH*, was born at Walsingham.—*SIR EDWARD COKE*, a celebrated lawyer, was born at Milcham, in 1549.—*SIR HENRY SPILLMAN*, the antiquary, at *COUGHAM*.—And *SIR JOHN FALSTAFF*, a general, in the reigns of *Henry IV.*, *V.*, and *VI.* He was born at *Yarmouth* in 1377, and was engaged in the celebrated battle of *AGINCOURT*, where he took the Duke of Anjou prisoner.

The character of *Sir John Falstaff*, as drawn by *SHAKESPEARE*, is said to be contrary to the fact. Having been ill-used by some of this gentleman's posterity, he drew *Sir John's* character as an original of cowardice, and extravagant buffoonery, set off with good humour, instead of which he had acquired great reputation by his valour and honourable conduct.

This county sends 12 Members to Parliament; namely, 4 for the county; 2 for *Norwich*; 2 for *Lynn*; 2 for *Thetford*; 2 for *Yarmouth*.

POPULATION OF THE CHIEF TOWNS.

NORWICH	61,110	Harling & Par.	1,031
Yarmouth	21,115	Hingham	1,539
Lynn Regis	13,370	Holt	1,622
Attleborough	1,939	Lodden	1,175
Cromar	1,232	Methwold	1,266
Dereham, & Par.	3,946	Swaffham	3,285
Diss	2,934	Thetford	3,462
Downham	2,198	Walsham	2,615
Fakenham, & Par.	2,085	Watten	1,027

THE ENGLISH CONQUEST OF IRELAND.

It is so ordained, that the most important events proceed frequently from causes, which seem of all others the least likely to produce them. The English conquest of Ireland is strikingly illustrative of this truth.

At the period when Henry the Second reigned in England, Ireland was divided into five provinces, and governed by its prince. M'Morrog, the prince of Leinster, was an exceedingly licentious immoral man; and having put a very grievous affront upon the prince of Meath, the latter engaged Roderick O'Connor, prince of Connaught, in his interest. Leading their united forces into the province of Leinster, these two princes chased M'Morrog from the kingdom. Though conscious that he had abundantly deserved this treatment, he was naturally averse to receiving it; and the King of England being at that time exceedingly powerful, he resolved to endeavour to interest that monarch in his favour. As the most effectual and speedy means of doing so, he repaired to the English monarch's court, and offered to hold his native province as feudal superior, if that monarch would assist him in recovering possession of it. To prove his sincerity in making this offer, he did homage upon the spot to Henry, as his feudal superior. It is probable that Henry did not think the feudal lordship of a portion of Ireland a very important or considerable acquisition. For though he accepted the tendered homage of M'Morrog, and promised the aid he sought, and also his permanent protection, he was in no hurry to furnish the former, or to extend the latter.

Disheartened or offended by the cold and dilatory treatment of his new lord, M'Morrog resolved wisely, as regarded his personal interests, to seek aid in some other quarters.

Accordingly, having respectfully departed from the court of Henry, M'Morrog proceeded to Bristol. From this port he could have speedy communication with those of his subjects in Ireland who still remained faithful to him. While resident at Bristol, M'Morrog became acquainted with a Welch chieftain, possessing some power; and to secure that chieftain's aid in recovering his dominions, M'Morrog bound himself to declare him his heir, and to give him his only daughter for a wife. This treaty came to the ears of Fitzstephens, the military governor of that portion of Wales which obeyed the English court; and he caused M'Morrog to be surprised and lodged in prison. This circumstance, which seemed to be utterly destructive of all M'Morrog's hopes, was, in fact, the main cause of their being gratified. After having caused him to be a prisoner for the tedious period of three years, Fitzstephens appears to have repented of being so great an enemy to him. From being so he suddenly became one of his warmest and most zealous friends. By his influence, joined to that of Maurice Fitzgerald, the captive king was set at liberty. Grateful for their intercession, and desirous of securing their powerful aid in the recovery of his principality, M'Morrog pledged himself, that if he should recover it, he would grant to them the whole of the large and wealthy town of Wexford, together with a large tract of land in its immediate vicinity. They gladly undertook to render him all possible assistance in an undertaking, in the success of which they were so deeply concerned. To this end they both commenced mustering their friends and retainers, while M'Morrog proceeded to Ireland, to pave the way for their landing with success. The adventurers, on landing in Ireland,

had not more than 500 men at their disposal, but M'Morrog sent a similar number to join them. Even the united force was an exceedingly small one for so audacious an enterprise as that for which it was raised. But what M'Morrog's friends lacked in numbers, they had in discipline, courage, and confidence; and they unhesitatingly marched against the populous town of Wexford. The inhabitants of that town, to the number of 2000, advanced to oppose their progress. But not even their great numerical superiority could tempt the Wexfordians to hazard an encounter with the perfectly armed and highly-disciplined Welshmen. Hastily regaining their city, and closing its massive gates, they resolved to stand a siege. In order to give the besiegers some idea of the obstinate resistance upon which they were to calculate, they actually set fire to and destroyed all the houses which stood beyond the fortified walls. By this time the besiegers were joined by M'Morrog himself, and they advanced with great ardour to the siege; but they were met with equal ardour by the besieged, and, after a desperate conflict, fairly repulsed.

Had all within the walls been hostile to M'Morrog, it is more than probable that he would have been unsuccessful in the end. But he had wisely conciliated the priests; and those reverend persons had sufficient influence with their flock, to persuade them to surrender, and to be reconciled to their king. Bad as his previous conduct had been, M'Morrog seems to have been well deserving of the support and assistance of his Welsh friends; for the instant that he obtained possession of Wexford, he fairly made it over to them, together with the stipulated accomplishment of the surrounding land. Aiding M'Morrog in all his expeditions against the other provinces of Ireland, the English and Welsh lords of Wexford gradually, but constantly, increased their conquests; and it was this band of adventurers by whom the conquest of Ireland, and its annexation to England, was commenced.

Had M'Morrog not been an immoral man, and had he not, for his immorality, been chased from his kingdom, and compelled to solicit the aid of foreign adventurers, Ireland might have preserved its independence to this hour; and it most certainly *would have preserved it to a much later period than it did.*

THE NAMES OF THE MONTHS EXPLAINED.

JANUARY,

The first month of the year, was so called by the Romans, from JANUS, one of their deities, to whom they gave two faces; because, on the one side the first day of this month looked towards the NEW YEAR, and on the other towards the OLD.

The rigour of the season in this month requires the figure to appear as if almost clothed in white; because in this month the Earth is frequently covered with snow.

This figure, representing January, is blowing his nails, and under his left arm is a billet, for the purpose of denoting the season of the year.

The sign of AQUARIUS, the water-bearer, is added, to shew that rain and snow, during this month, fall in abundance. The SUN enters the sign of AQUARIUS on the 21st of this month.

This month was added to the year of ROMULUS by NUMA POMPILIIUS.

FEBRUARY,

The second month of the year, was so named by NUMA

PAMPILIIUS, either from the fevers that were so common in Italy about this time, or from the god **FEBRUVUS**, who presided over the feast held by the ROMANS to celebrate the *obsequies* of the dead.

This month is characterised as a young man dressed in cloudy coloured drapery, from the frequency of the rain and gloomy sky. On his left is added the sign of **PISCES**, the **FISHES**, because the sun in passing this celestial sign, denotes the month; and as the fish is an aquatic animal, it alludes to the *humidity* of the season, from the rain falling about this period in abundance. The **SUN** enters **Pisces** on the 19th of this month.

MARCH,

The *third* month of the year according to our reckoning, but with the ROMANS the *first*; which ROMULUS called **MARS**, from the name of his supposed father.

This month is characterised by a young man of a sprightly aspect, and in armour, because it was dedicated by ROMULUS to **MARS**. The sign of **ARIES**, the RAM, denotes the beginning of the Roman year. The spade alludes to the season, as being necessary to prepare the ground for sowing. The **SUN** enters the sign **ARIES** on the 20th of this month, and makes the *ernal equinox*.

APRIL,

The *fourth* month of the year, is so named from the Latin word "*Aperio*," "I open;" because in this month the **EARTH** begins to open and send forth her riches.

This month is represented by the ancients, as a young man in green, with a garland of myrtle and hawthorn buds, in allusion to the fields sending forth their verdure. In one hand he has some primroses and violets, in the other the sign **TAURUS**, the BULL. The **SUN** enters the sign **Taurus** on the 20th of this month.

MAY,

The *fifth* month of the year, was called by ROMULUS, **MATIS**, out of respect to the *senators* and nobles of his city, who were called *Majores*.

ROMULUS divided his people into two parts, the **MAJOR** and **MINOR**; the former possessing wisdom and counsel to govern the **REPUBLIC**, and the latter arms to defend it.

Others are of opinion that it received its name from **MAIA**, the mother of **MERCURY**.

MAY is represented by a young man dressed in green, embroidered with various flowers, with a garland of the same kind upon his head. In one hand he holds a lute, upon the fore-finger of the other a nightingale, with the sign **GEMINI**, the **TWINS**. The **SUN** enters *Gemini* on the 21st of this month. The green flowered dress and the garland signify the gayness of the fields, and the general face of **NATURE** at this season of the year.

JUNE,

The *sixth* month of the year, is said to have been so named from a temple of the goddess **JUNO**; others, however, are of opinion, that it took its name from **JUNIUS BRUTUS**, who expelled **TARQUIN** the kingdom on the 1st of this month.

JUNE is represented by a young man clothed in a lighter dress than the preceding figure, to indicate the commencement of summer. Upon his head is a garland of flowers, upon his arm is a basket of the fruits of the season, and in his right hand is the sign **CANCER**, the CRAB. On the 21st of this month the sun enters **Cancer**, and makes the *summer solstice*.

JULY,

The *seventh* month of the year, was so named from

the Latin word, **JULIUS**, the surname of **CÆSAR**, who was born in this month.

MARK ANTHONY first gave this month the name of **JULY**, in honour of his illustrious friend, **JULIUS CÆSAR**; before which time it was called **QUINTILIS**, as being the fifth month of the (Roman) year, as had been established by **ROMULUS**.

JULY is represented by a young man in a light jacket, eating cherries, with his face and bosom sun-burnt; on his head is a wreath of wild thyme; a scythe on his shoulders, a bottle at his girdle, and at his side the sign of **LEO**, the **LION**.

JULY, by the **SAXONS**, was called *Hay-monat*; that is, the *Hay month*, because in this month they usually mowed and made their *hay*. The **SUN** enters the sign **Leo** on the 23d of this month.

AUGUST,

The *eighth* month of the year, was dedicated to the honour of **AUGUSTUS CÆSAR**, because in this month he was created **Consul**, triumphed three times in **ROME**, subjected **Egypt** to the power of the **ROMANS**, and put an end to the *Civil Wars*.

This month is characterised by a young man of a fierce and cheerful countenance, with a flame-coloured garment; upon his head a garland of wheat and rye; upon his arm a basket of ripe fruits; at his belt, a sickle; and at his side, the sign **Virgo**, the **Virgin**. The **SUN** enters **Virgo** on the 23d of this month.

SEPTEMBER,

In the *Roman Calendar*, was so called from the Latin word, *Septem*, seven, which by the *Romans* was reckoned the seventh month of the year; but in the present almanac, it is the *ninth* month from the beginning of the year.

This month is represented by a young man dressed in purple, of a merry and cheerful countenance; upon his head a wreath of white and purple grapes; under his left arm a bundle of oats; in his right a *cornucopia* of the ripe fruits of the season,—as pears, peaches, &c.; and in his right hand the sign **LIBRA**, the **BALANCE**.

He is dressed in purple, being reckoned the prince of the months, by producing a copious provision of all the necessities of life.

This month was, for some time, called **GERMANICUS**, from the emperor of that name; and *September*, from being the *seventh* after *March*. The **SUN** enters **LIBRA** on the 23d of this month.

OCTOBER,

The *tenth* month in order from *January*, derives its name in the same manner as the preceding month, from *Octo*, eight, being the *eighth* month from *March* in the *Roman calendar*.

This month is represented by a young man dressed in a garment of yellow and carnation; upon his head a garland of oak-leaves and acorns; in one hand he holds a basket of medlars, mushrooms, and chestnuts, with other fruits that ripen at this time of the year; in the other the sign **SCORPIUS**.

The garment is painted in these colours,—a kind of chestnut, because the **SUN** declining in the *winter solstice*, the juices of the plants begin to shrink, and their leaves become of this tint.

This month, for a time, was called **DOMITIAN**, from the emperor of that name, but afterwards was cancelled by a decree of the *Roman senate*. The **SUN** enters the sign **Scorpio** on the 23d of this month.

NOVEMBER,

The eleventh month of the year, is so called from its being the ninth month from March in the Roman calendar; and the following month is so named from its being the tenth from March; from the Latin words *noven*, nine, and *decem*, ten.

This month is represented by a young man, whose drapery is the colour of the leaves when they begin to fall; round his head is a garland of olives with the fruit; in his left hand bunches of parsnips and turnips, signifying the products of this month; and in his right hand is the sign **SAGITTARIUS**, the Archer.

The garland of olives is a sign of their maturity, and the time of their being gathered. The SUN enters **SAGITTARIUS** on the 22d of this month.

November is generally said to be the most gloomy month of the year.

DECEMBER,

The twelfth and last month of the year, was so named by ROMULUS in the Roman calendar, which means there the tenth and last month of the Roman year.

This month is characterised by an old man, with an *austere* and fearful aspect, clad in an Irish rug, or coarse frieze, girt upon him; upon his head no garland, but three or four night-caps, and over them a Turkish turban; his nose red; his mouth and beard clogged with icicles; at his back is a bundle of holly, ivy, or mistletoe; and holding in furred mittens a hatchet and the sign of **CAPRICORNIS**, the Goat.

The hatchet is an emblem of the season, it being now the month for cutting down timber, as the virtue of the trees at this time concentrates in the trunks, and, for that reason, are more desirable for different purposes.

The earth at this season of the year is bereft of all its ornaments, and for this reason he is represented without a garland.

The SUN enters the tropic of **CAPRICORN** on the 21st, and forms the winter solstice.

THE LEEK.

To attempt indisputably to account for the wearing of the *leek* by the Welsh on St. David's day, would be useless. Tradition assigns as the reason a victory obtained in the sixth century, by Cadwallawn, over the Saxons, in a battle during which the Welshmen wore leeks in their caps to distinguish each other from foes. This is the more plausible, from the circumstance of the leek being one of the vegetables held sacred by several of the ancient nations, particularly the Egyptians and Phoenicians; from which latter, the British Druids are supposed to have derived many of their rites and mysteries. A religious respect being thus attached to the vegetable, will account for its being assumed as a badge; and the issue of the battle being in favour of those who assumed it, would tend to increase the veneration in which it had previously been held.

Another version of this tradition states, that St. David headed the Welsh, when the badge was adopted, and names his festival as the day on which the battle was fought. The 1st of March is the day of St. David's canonization. His zeal against the Saxons was probably the cause of his being considered the patron-saint of the Welsh; in which case the memento of Welsh triumph and Saxon discomfiture could hardly be exhibited at a more

appropriate time than on his festival. The leek is called by the Welsh *centrin*.

It has been asserted by some, that the *sef*, or, as the English call them, *chives*, a vegetable similar to the leek, but smaller, was the original Welsh symbol. It is called *sef-lan-gwy*, and *cenin-sef*, and may certainly, through its similarity in name and form, have given up its honourable distinction to the leek.

HISTORY.

Or all studies that of history is the most useful and interesting. HISTORY, in its most extensive sense, signifies a narration of the most remarkable events that have happened in the world, arranged in the order of time in which they were transacted,—an enumeration of the causes to which they may be attributed, and the effects which they may be said to have produced.

"History," says a celebrated modern writer, "is the exhibition of MAN, the display of human life, and the foundation of general knowledge. It expands the ideas, enlarges the mind, and eradicates those narrow and illiberal prejudices which dim and corrupt the understanding."

By the study of HISTORY we not only gratify a laudable curiosity respecting past events, but we draw the most interesting conclusions as it regards their causes and consequences. We may trace the progress of refinement, and the gradual advance from the rudeness of savage life to the elegances of the most exquisite luxury; from the garment of skins, to the embroidered and jewelled robe; from the hut of bark, to the magnificent palace, with its rich furniture and pictures; from the undisciplined rabble, armed with clubs and stones, to the gallant army, drawn up in battle array, with banners waving, arms glittering, trumpets sounding, and its proud steeds pawing the ground with eagerness for the combat.

A contemplative mind will likewise discover, from this study, the effect which the gradual progress of refinement has on the condition of the human species, by giving rise to commerce, which opens a communication between the most distant countries on the GLOBE, and carries on an interchange of the commodities which each country respectively furnishes, and others need.

HISTORY likewise informs, or ought to inform us, of the rise and progress of regular government, and of laws, of societies, states, and empires; of the causes of their increase, prosperity, and downfall or decay; of the conquests they have achieved, and the losses they have sustained by invaders; of their internal commotions, and the influence they have exercised on the morals, manners, and happiness of the people who have been the subject of them.

Of HISTORY there are several species:—1. ECCLESIASTICAL HISTORY, or the HISTORY OF THE CHURCH in all ages, which is important both in a religious and a political point of view.

2. The HISTORY of the ARTS and SCIENCES, on which the wealth and prosperity of States essentially depend, and the great advances in which have given modern nations so decided a superiority over the ancients.

3. POLITICAL HISTORY, or an account of the actions of rulers, their wars, negotiations, government, and every occurrence of importance.

To enter upon the study of HISTORY with advantage, a previous acquaintance with GEOGRAPHY and CHRONOLOGY is essentially necessary. Without this, HISTORY

cannot be properly understood, but will present a confused mass of facts, frequently unintelligible, and from which no useful inferences can possibly be drawn.

The HISTORY of the WORLD at large, or UNIVERSAL HISTORY, has, for the purpose of assisting the memory, been divided into certain periods, each marked by some great event.

1. The CREATION.
2. The FLOOD.
3. The period when HISTORY began to assume an authentic form, and to relate facts with some regard to truth and probability.
4. The CONQUEST OF BABYLON by CYRUS, and the destruction of the BABYLONIAN EMPIRE.
5. The reign of ALEXANDER the GREAT, and the overthrow of the PERSIAN EMPIRE.
6. The destruction of CARTHAGE.
7. The CHRISTIAN ERA.
8. The division of the ROMAN EMPIRE by CONSTANTINE.
9. The destruction of the WESTERN EMPIRE, and the settlement of the EUROPEAN NATIONS.
10. The MAHOMETAN ERA, and the conquests of the SARACENS and TURKS.
11. The CRUSADES, and the principal events which have occurred since that time.

For a knowledge of the most important transactions which took place in the FIRST PERIOD, we must refer to SCRIPTURE, as there is no profane historian who gives even a probable account of that remote age.

In GENESIS, we find that men lived in one society, used one language, were under a patriarchal government, lived to a great age, understood many of the mechanic arts, and the use of metals, invented musical instruments, and at length became corrupt and debauched in their morals and manners.

An account of the SECOND PERIOD must be chiefly drawn from the same source. It includes the destruction of the HUMAN RACE by the DELUGE, except Noah and his family, who were preserved in the ark; the building of the Tower of BABEL, the CONFUSION OF TONGUES, and the dispersion of man into different countries and different societies; the departure of the ISRAELITES from EGYPT, and their conquest of CANAAN; their change from a THEOCRACY, or government by God alone, to a MONARCHY; the actions of their kings and prophets, to the carrying away of the TEN TRIBES OF ISRAEL into captivity.

From the heap of *Fables* called PROFANE HISTORY, we gather something respecting the siege of Troy by the GREEKS, who had in a degree emerged from barbarism, and formed themselves into numerous petty kingdoms and states.

The HISTORY of EGYPT is by no means to be depended upon during this period. TYRE was an opulent, commercial city; but both EGYPT and TYRE fell under the dominion of NEBUCHADNEZZAR. ROME was founded by ROMULUS, b.c. 752. EUROPE was, during this period, with the exception of GREECE, in a state of the deepest ignorance and barbarism.

The THIRD PERIOD commences with the 56th, vulgarly called the 28th *Olympiad*, b.c. 68. And now profane history begins to assume a more credible form, though still debased by fable. The ROMANS were rising into notice in ITALY; while in Greece the petty states of ATHENS and SPARTA were laying the foundation of their future fame.

The conquest of ASSYRIA swelled the Babylonian empire to a great extent, now comprehending Phoenicia, Palestine, Syria, Babylonia, Media, and Persia. In the year 586 b.c., Jerusalem was destroyed by NEBUCHADNEZZAR.

The FOURTH PERIOD of general history is short, including only thirty years, and terminating with the conquest of BABYLON by CYRUS. Under SERVIUS TULLIUS,

the ROMANS were now become formidable to the surrounding nations, though that prince increased their greatness rather by arts of peace than of war. At this time commenced the disputes between the GREEKS and PERSIANS, respecting the colonies of the former who had settled in ASIA MINOR.

The FIFTH PERIOD extends from the conquest of BABYLON to the death of ALEXANDER the GREAT, and the dismemberment of his vast dominions. The JEWS were now released from captivity, and rebuilt JERUSALEM and the TEMPLE. CAMBYSES added EGYPT to his empire. GREECE waged successful war with PERSIA, until, at length, the latter was entirely subdued by ALEXANDER the GREAT. ROME and CARTHAGE were making rapid advances in extent of dominion and power.

The SIXTH PERIOD is dated from the division of the vast empire of ALEXANDER between his four principal commanders. CASSANDER had Macedonia and Greece; ANTONIUS, Asia Minor; SELEUCUS, Babylon, and the eastern provinces; and PTOLEMY LAGUS, Egypt, and the western provinces. Great revolutions, however, soon took place, and still further divisions gave rise to the kingdoms of Pontus, Bithynia, Pergamos, Armenia, and Cappadocia. SYRIA and EGYPT, however, continued long powerful. ROME had wars with CARTHAGE with various success, till they ended by the destruction of the latter, b.c. 146.

The SEVENTH PERIOD is remarkable for the astonishing spread of the ROMAN EMPIRE, which, before its close, comprehended almost the whole then known world. At its commencement, SYRIA and EGYPT were on the decline. The empires of India and Parthia, in ASIA; Ethiopia, Numidia, Mauritania, and Getulia, in AFRICA; Gaul, Germany, part of Spain, Macedonia, and Greece, in EUROPE, preserved a show of independence; but they were speedily overwhelmed by the gigantic power of ROME, and fell under her dominion. In this period, JESUS CHRIST was born, and Jerusalem was destroyed by Titus espasian.

The EIGHTH PERIOD commences at the death of TRAJAN, when the ROMAN EMPIRE comprehended Britain, France, Spain, the Netherlands, Italy, part of Germany, Egypt, Barbary, Bledulgerid, Turkey in Europe and Asia, and Persia.

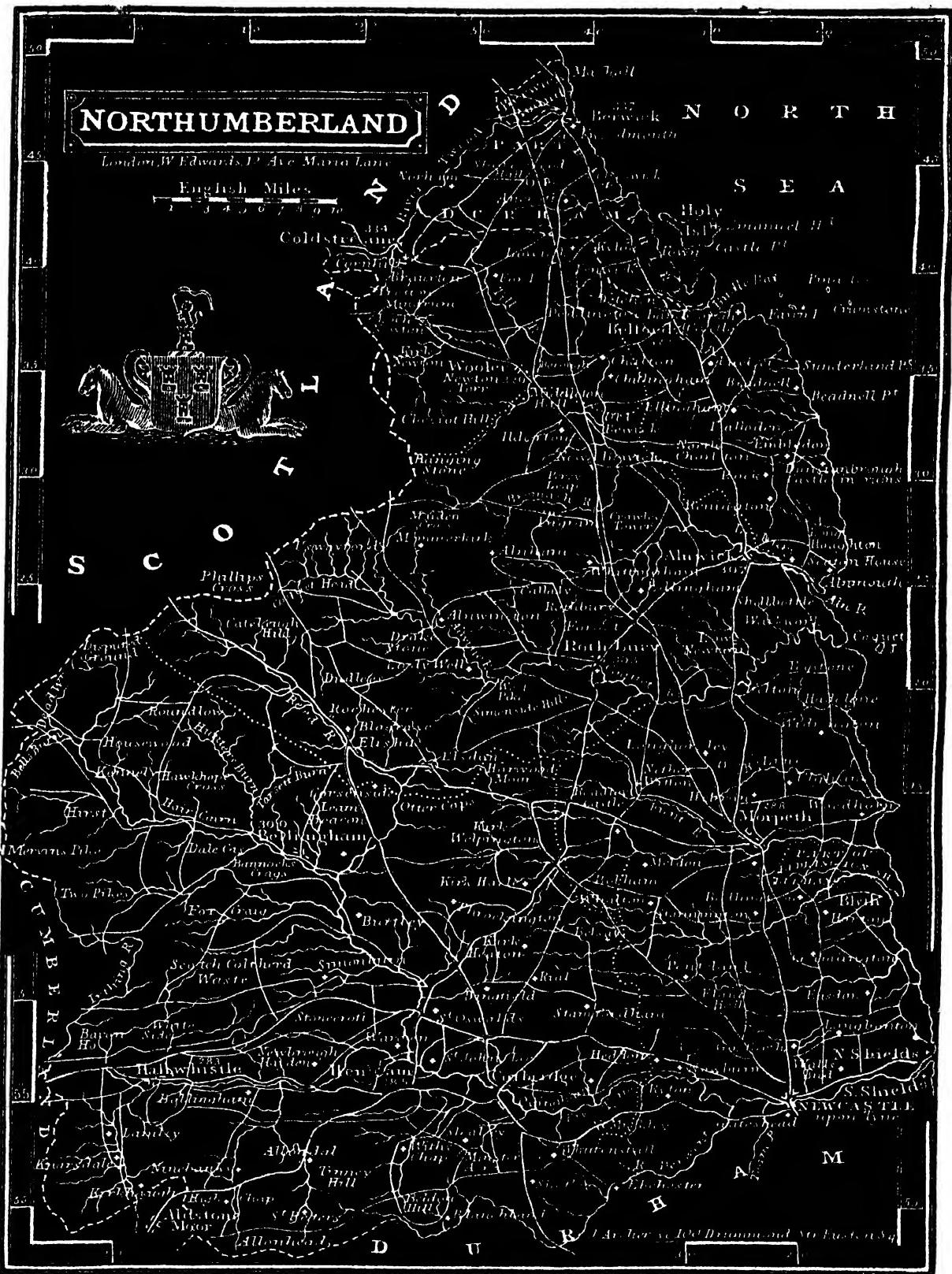
The northern parts of Europe and Asia, however, contained many fierce and warlike nations, which even now threatened, and finally accomplished, the destruction of the Roman power.

This destruction was accelerated by the removal of the seat of empire from ROME to BYZANTIUM, by CONSTANTINE, who named it after himself, CONSTANTINOPLE.

The NINTH PERIOD presents us with a most lamentable picture of the decline and fall of the ROMAN EMPIRE. Without, were barbarous enemies, ready to take every advantage, and to plunder and destroy without mercy; within, were misrule and the most odious vice, both amongst prince and people; numerous pretenders to the PURPLE starting up continually and desolating the country by civil wars; until, at length, a.d. 476, the destruction was completed by the HERULI, and ROME ceased to be an imperial city. Important revolutions also took place in BRITAIN, FRANCE, and SPAIN.

(To be continued.)

GUIDE TO KNOWLEDGE.

PRICE
ONE PENNY.



NORTHUMBERLAND.

NORTHUMBERLAND is so called from its situation, being north of the Humber. In the SAXON HEPTARCHY it formed part of the kingdom of the Northumbrians, which contained not only the county now called Northumberland, but also Yorkshire, Lancashire, Durham, Cumberland, and Westmoreland. It is a maritime county, and the most northerly in England.

NORTHUMBERLAND is bounded on the north by Scotland; on the east by the German Ocean; on the south by Durham; and on the west by Scotland and Cumberland. It is about fifty miles in length, forty in breadth, and one hundred and fifty in circumference. Newcastle-upon-Tyne, its capital, is 270 miles north from London.

The climate of Northumberland is subject to great variation; hence the weather is inconstant, but mostly in extremes. The air, however, is exceedingly healthful, and the people, who generally live to a great age, are seldom afflicted with sickness. The soil is various; the eastern part, which is fruitful, produces corn in great plenty, and it has also rich meadows on the banks of the rivers; but the western part is generally barren, it being mostly heathy and mountainous. The south-east part abounds in coal, of which eight hundred thousand chaldrons are computed to be annually sent to London. There are also large quantities of lead and timber. This county gives the title of Duke to the noble and ancient family of Percy. The principal manufactures are those which depend on the colliers, such as glass-works, potteries, iron-foundries, &c.

Its chief rivers are the Tyne, the Tees, and the Cuckoo, all of which abound in salmon and trout. The Tyne, the principal of these, is formed of two branches, called the North and South Tyne, which rise at a considerable distance from each other, and uniting a little above Hexham, flow on to Newcastle, and from thence into the sea at Tynemouth. The Tweed divides England from Scotland, and falls into the sea at Berwick. The Cuckoo runs through the middle of the county, and empties itself into the sea at Warkworth.

This county was anciently inhabited by the Ottunduni; under the Romans it made a part of the province called *Marema Cæsariensis*. During the Saxon Heptarchy, it made part of the kingdom whose name it bore; it was afterwards called Bernicia, and alternately claimed by the English and Scots, to which last people it belonged in the time of ALFRED. It contains 12 market towns, and 160 parishes. It is in the diocese of Durham.

Its chief towns are Newcastle, Morpeth, Hexham, Alnwick, and Berrick.

NEWCASTLE, usually called Newcastle-upon-Tyne, to distinguish it from Newcastle-under-Lyne, in Staffordshire, is situated on the north side of the Tyne, over which it has a stately bridge into Durham. Here ended the famous Piets' Wall, which runs through the vicarage garden.

In the time of the SAXONS it was called *Monaster*, from the monks here, who all fled when it was depopulated by the Danes; and afterwards NEWCASTLE, from a castle built here by ROBERT, the eldest son of William the Conqueror, in 1080, to defend it against the Scots, whose king had this town before the Norman Conquest, and who sometimes resided here. In the reign of Edward I. it was burnt by the Scots, but it was shortly after rebuilt. It has been a borough ever since the reign of King Richard II. In the reign of Henry VIII. this place

is said to have exceeded in the strength and magnificence of its works all the cities of England, and most places in Europe. The castle overlooks the whole town, which is seated on the declivity of a steep hill, running down to the river. That part of the castle built by Robert was of great strength. The outward fortifications are now defaced, and their site crowded with buildings. The tower remains entire. It is situated on a lofty eminence, and its principal entrance is on the south. This castle belongs to the county, and makes no part of the liberties. It is now the county prison, and in the great hall the judges hold the assizes. Here Bahol, king of Scotland, did homage to Edward I., in 1292, as did Edward Bahol, in 1331, to King Edward III. It is a town of great antiquity, and is supposed by some to have been a Roman station. There are still to be seen some remains of a Roman military way, leading to Newcastle from Chester-le-street. This road was carried over the river Tyne by a bridge of arches at the very place where the present bridge stands.

This town appears to be divided into two parts, by the Tyne; Newcastle, properly so called, being *ore*, and Gateshead, on the Durham side of the river, which appears as a sort of suburb to Newcastle, as the other. They are both joined by the bridge, which consists of nine arches, as large as those of the old London Bridge, which has been recently removed from just below the site of the present bridge built by RENFREY. The Tyne is here a fine, deep and noble river, so that ships of 400 tons burthen can come up to the town. The houses are built chiefly of stone, others of brick. Here are five parish churches, and six chapels of ease, besides fifteen places of worship. The situation of Newcastle is very abrupt and uneven, as also is that of Gateshead. The country around Newcastle and Gateshead is particularly noted for windmills. The public charities of Newcastle are both numerous and well endowed. There are also numerous vestiges of monastic antiquity. Here is a well-endowed and large infirmary, and an assembly room that attracts great attention; it contains every useful apartment, and a ball-room, 99 feet by 16. In the beginning of the late civil wars, this town was taken and plundered by the Scots, who here sold their king, Cuvaris I. for 200,000*l.* in hand, and security for as much more. This place is particularly noted for its manufacture of fine glass, and for coals, salmons, and grindstones; from whence came the proverb, "That a Scotsman and a Newcastle grindstone, travel all the world over." Here is also a manufactory of hardware similar to that of Sheffield. Here are a magnificent exchange and a custom-house, and the finest quay in England, except that at Yarmouth: being 700 yards long, it is far more spacious and larger than those of London, Bristol, and Liverpool, though not equal to either for business. Here is a handsome mansion-house for the mayor, who is allowed 600*l.* a year for his table, besides a coach and barge. Newcastle is very populous, containing 12,760 inhabitants; and Gateshead, (which, by the Reform Act, is made a borough,) 15,177.

This town, next to the city of York, is the largest and handsomest in the north of England. It is built on the top, side, and the bottom of a steep hill; the streets on the top are open and handsome, but the others are narrow, mean, and dirty. The Literary and Philosophical Society of Newcastle-upon-Tyne, is one of the most respectable institutions in the kingdom, and has contributed greatly to the diffusion of literature and science. Great improvements have been made here within these

few years, by removing obstructions, opening new streets, and paving the principal old ones. The punishment of the *bridle* for scolds is said to have formerly been in use in this town. It is worth remembering, that at the assizes here in 1743, two old men were subpoenaed hither as witnesses from a neighbouring village, one being 135 years of age, and his son, 95, both hearty, and having their sight and hearing; and that in 1744, one Adam Turnbull died in this town, aged 112, who had had four wives, the last when he was near 100 years old.

ALNWICK is a neat and populous town on the high north road to Edinburgh, through Berwick. It is seated on the side of a hill, on the river *Alne*. This town has been particularly fatal to the kings of Scotland. In the reign of William Rufus, it was besieged by Malcolm II. king of Scotland, who, upon the point of being victorious, was killed, together with his son, and his army was routed. It is also famous for a victory obtained by the English over William king of Scots, in 1174, who was taken here and carried prisoner to King Henry II., who detained him till he gave security to pay 100,000*l.* for the ransom of himself and some others. It was reduced to ashes in 1215. The castle, situated on an eminence near the town, and one of the seats of the DUKE OF NORTHUMBERLAND, may be justly considered as one of the most magnificent models of a castle in existence, as it was formerly a fortress for strength and defence. This castle first came into the possession of the family of the present duke in 1309. It has had every embellishment that art can contribute or expense procure. All round the octagon towers are several figures of warriors in the attitude of defence, which have a very singular effect. The ancient appearance of the castle seems to have filled the inhabitants with the like ideas, for, besides a large Gothic gateway and clock, the shambles, &c. are in the same style. The town has been formerly walled round, the vestiges of which may be traced, and the three gates yet remain almost entire. The customs, words, habits, and even the buildings of this town, as well as all over Northumberland, imitate those of the Scots; and they are very strict in the observance of their religious duties. Alnwick is distant from London 310 miles.

Belford is a small town, but one of the neatest in the north of England. It is situated on the ridge of a hill, on the high road to Berwick. Near this town are the remains of a Danish camp. It is 15 miles from Berwick, and 326 from London.

BERWICK-UPON-TWEED, seated on the borders of England and Scotland, was long the bone of contention between the English and Scots, and for a long time was considered as belonging to either, but now it is understood as forming a part of England; nevertheless it is considered a distinct liberty, having a small district attached to it, consisting of about three miles inland. It is surrounded by a wall, except on that side towards the sea; and was formerly fortified with a castle, but this is now in ruins. The language and laws of the town are a mixture of Scotch and English. The streets are, for the most part, narrow, but well paved. It is seated on an eminence that commands far into the sea, and has the Tweed rolling just below, over which is a handsome bridge of 15 arches. It is large, populous, and well built. It is chiefly noted for its salmon fishery in the Tweed. Its population is 8,920. It is 11 miles from Haddington, 56 from Edinburgh, and 341 from London.

HALTWHISTLE is a considerable town on the high road from Carlisle to Newcastle. It is chiefly noted for its

inns and its manufacture of baize. This place was plundered by the Scots in the reign of Queen Elizabeth.

HEXHAM is also a small town; the streets are narrow, and the houses are ill-built. It is chiefly noted for its church. It was formerly the See of a bishop, (A.D. 674,) but the diocese was so harassed by the DANES, that no one would accept of the bishoprick, and it was therefore united to Lindisfarne in 883. The original church was raised by workmen brought from Italy, and is said to have exceeded in beauty and elegance every other in the land, no part of which now remains. The present church bears innumerable marks of magnificence, and contains many ancient tombs, and is attributed to its first prior. The architecture is a mixture of Saxon and Gothic. Hexham is supposed to have been a Roman station. Near the church are the remains of the priory. The town and the priory were destroyed by the Scots in 1296, and pillaged again in 1346. It is 15 miles from Newcastle.

MORPETH is a considerable town, seated on the north side of the river Wansbeck. It had once an abbey and a castle, which are now in ruins. In 1215 the inhabitants themselves burnt their town in mere spite to King John. It is 291 miles from London.

LEARMOUTH, on the banks of the Tweed, was formerly a very handsome town, but is now fallen into decay, consisting only of a farm-house.—ROTHNURY is an inconsiderable town, 9 miles from Alnwick. It formerly had a castle, to which a barony was annexed, but is now in ruins.—WOLLER, a small town, is seated in an ill-cultivated country, under the influence of vast mountains, which renders it subject to impetuous rains. It is much resorted to in the summer months by invalids, to drink goat's milk and whey. It is about 13 miles from Berwick.

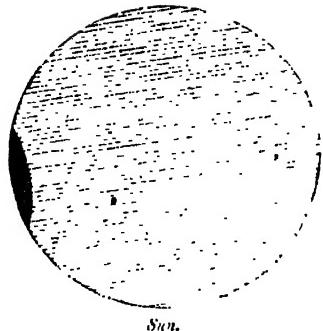
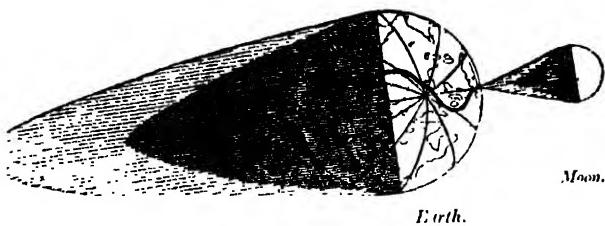
TYNEMOUTH, formerly a mere village, by the Reform Act is made a borough. It is seated at the mouth of the Tyne, hence its name. It is 9 miles from Newcastle, and 278 from London. It is noted for its salt-works, but the greatest article of trade is coals, of which upwards of a million chaldrons are sent annually to London. It is now much resorted to during the summer months as a watering-place. Here is a large and stately castle, seated on a very high rock, inaccessible on the sea-side, and well mounted with cannon. In this castle was formerly a monastery, of which many fine arches remain. It was often plundered by the DANES. It incloses an area of about six acres, and its present appearance is strikingly noble.

POPULATION OF THE CHIEF TOWNS.

NEWCASTLE	42,760	Rothbury to.	1,014
Alnwick	6,788	Haltwhistle Par. . .	3,101
Morpeth	3,890	Haltwhistle to.	1,018
Berwick	8,920	Belford, & Par. . .	2,030
Hexham, & Par. .	6,042	Belford to.	1,354
Rothbury, & Par. .	2,869		

Northumberland sends 10 members to Parliament, 4 for the county (being two additional); 2 for Newcastle; 1 for Morpeth (formerly 2); 1 for Tynemouth (a new borough); and 2 for Berwick.

THE SOLAR ECLIPSE, JULY 17, 1833.



Brightly beaming on the busy earth, resplendent shines
The noon-day Sun - But lo ! what wondrous sight is this!
Luna, beauteous Queen of Night, errant in her course,
'Tween Earth and Sun is seen to move, -Sol's rays eclipsed,
Darkness spreads around, and trembling mortals
Stand aghast.—If such there be, now let the Atheist pause—
Let him gaze but once upon the glorious scene,
And ask, Can man do this ? When self-convicted,
Let him humbly give, if he has ne'er done so before,
His willing tribute of obedience—meed of praise—
Of love and gratitude, to that great Omnipotent
Who wills the obedient orbs in their due spheres to move.
For man, presumptuous as he is, cannot, durst not deny,
That this glorious scene, loudly and to all worlds proclaims,
At once th' EXISTENCE and OMNIPOTENCE of God.

W. M.

ASTRONOMY perhaps alone among the sciences can lay claim to the appellation of "Divine," as displaying to the intelligence of man, the infinite power, wisdom, and goodness of his Creator. To trace the Comet as through the wide expanse he wings his fiery course—to foretel, in after centuries, his return—to observe with attentive eye our Solar System—the Planets and their Satellites moving in majestic order in their various orbits—to take a wider range, to view the infinite expanse of the Heavens, the countless number of fixed stars, and apparent solar systems, perhaps even more extensive than our own, "*for ever shining while they roll;*" to reduce this boundless variety of objects to a system—to make the minutest calculations as to ECLIPSES and other appearances in the heavens,—is indeed a task worthy of angels, and is the peculiarly sublime and happy study of the astronomer.

To illustrate more fully with what accuracy these astronomical calculations are made, we present our readers with this week's number a day earlier than usual, in order to place before their view the above graphic description of the Solar Eclipse, which *will take place early on the morning of Wednesday, the 17th instant, and "commences" at Greenwich and London one hour after sun-rise, that is, at 4 hours 57 minutes and 59 seconds, or about 2 minutes 1 second (mean time) to 5 o'clock : arrives at its greatest obscuration at 5 hours 49 minutes 3 seconds, or about 10 minutes 57 seconds to 6 o'clock : attains the visible ♂ or conjunction at 5 hours 52 minutes 13 seconds, or about*

7 minutes 17 seconds to 6 o'clock ; and the Moon leaves the Sun's disk, or the Eclipse ends, at 6 hours 45 minutes 21 seconds, or about 16 minutes 39 seconds to 7 o'clock. The greatest obscuration, 8 degrees 49 minutes 34 seconds, or nearly three-fourths of the northern part of the Sun's surface."

Our readers will readily perceive, that by the above engraving, the observer is supposed to be at a considerable distance from the Earth, and in a position to see the whole of one side of the Sun, Earth, and Moon, and so as to have a distinct view of the eclipse or interception of the Moon between the Earth and Sun.

As all the planets and their satellites, including the Earth and Moon, receive their light by means of the Sun's rays, so each of them, being an opaque or solid body, intercepts the Sun's rays, and casts a shadow upon that part of the heavens opposite to, and in a direct line with it and the Sun. As when, for instance, the Moon intervenes in a direct line (as in the present instance,) between the Earth and Sun, a portion of the Sun's rays is *prevented* from reaching the earth; and in proportion as the line of motion, or orbit of the Moon, is in a plane with the ecliptic or orbit of the earth,—or, to speak more plainly, in proportion as the Moon moves in a direct line *between the centre of the Earth and Sun*, the *more rays* she prevents *from falling on the Earth*, and the greater is her shadow; and according to this is the eclipse total or partial on different parts of our globe; and when the Moon is in this situ-

ation she is said to be in σ , or conjunction with the Sun; and when the Earth intervenes between the Moon and the Sun, she is said to be in ϑ , or opposition to the Sun. As Eclipses of the Sun and Moon never take place but when the Sun and Moon are in conjunction or opposition, and as these phenomena occur once in every month, it might be inferred that these two luminaries would be eclipsed every month; but as these conjunctions and oppositions take place twelve times in the year, and as no more than seven eclipses can take place, and seldom more than four do really occur, we feel it necessary to explain the cause of this apparent contradiction.

When the Moon in her motion round the Earth crosses the ecliptic or orbit of the Earth, the points at which she touches, in so crossing that imaginary line, are called the nodes; if the Moon's orbit were on a plane with the ecliptic, in which the Sun apparently, but the Earth always moves, the Moon would cast a penumbra upon the Earth at every change, and a partial eclipse would ensue; in like manner, the Moon would pass through the Earth's shadow and be eclipsed every full; but, with this addition, that she would be enveloped in darkness (by the shadow of the Earth preventing the rays of the Sun from reflecting upon her, and so being refracted back upon the Earth) for an hour and a half; whereas the Sun never was eclipsed for more than four minutes. But the Moon in her orbit describes an oblique line, crossing the Earth's orbit on one side, $5\frac{1}{2}$ degrees above it, and $5\frac{1}{2}$ degrees below it on the other; so that when the Sun and Moon are more than 17 degrees from either of the nodes, or points where the Moon crosses the line of the Earth's orbit, the Moon is too high or too low in her orbit, too far from a direct line between the Earth and Sun, to cast any part of her shadow upon the Earth. And when the Sun is more than 12 degrees from either of the nodes at the time of full moon, the Moon is generally too high or too low in her orbit, too far from a direct line drawn from the Sun through the Earth, to be affected by the shadow or privation of the Sun's rays caused by the Earth intervening.

But when the Moon is less than 17 degrees from either node at the time of conjunction, her shadow falls more or less upon the Earth, as she is more or less in a direct line between the Earth and the Sun:—So when she is more than 12 degrees from either node at the time of opposition, she goes through a greater or less portion of the Earth's shadow, as the Earth is more or less in a direct line between her and the Sun.

The Moon's orbit contains 360 degrees, of which, 17 degrees, the limit of solar eclipses on either side of the nodes, and 12 degrees, the limit of lunar eclipses, are but small portions. And as the Sun commonly passes by the nodes but twice a year, it is no wonder we have so many new and full moons without eclipses.

In the present eclipse of the Sun, an inhabitant of the Moon, on the side next the Earth, observing the same, would see her shadow like a dark spot, travelling over the Earth about twice as fast as the equatorial portion of the Earth moves, and the same way as it moves, and in fact exactly as the same is delineated upon the Earth in the engraving, by the dark line, extending over and traversing the western parts of Europe, the Atlantic, and crossing Iceland, the Arctic Circle, thence to Spitzbergen, towards the North Pole, afterwards leaving the Arctic Sea, and after passing over some parts of Siberia and Kamtschatka, entering the Northern Pacific where it makes its exit.

By the eclipse of the Sun we are convinced of two facts,

viz. that the Moon's light is borrowed, and that her size is smaller than the Earth. Eclipses are also exceedingly useful in making various astronomical observations for navigation.

Independent of the sublime grandeur of this ordinary phenomenon in the movement of our satellite, and of the conviction which must flash upon the contemplative mind of the Reader, that this glorious sight proclaims a "hand divine,"—there is one, and only one fact, connected with the history of solar eclipses, in which a miraculous deviation from the general order must have taken place;—we allude to the eclipse of the Sun at our Saviour's passion, happening at the time of the full moon. Now, inasmuch as the total eclipse never occurs but at new moon, and when the Sun and Moon are in conjunction; and us, besides, the darkness in total eclipses of the Sun never lasts above four minutes in one place, whereas the darkness at the time of the Crucifixion lasted three hours, (Matt. viii. 15.) and overspread, at least, all the land of Judea,—this must have been a preternatural occurrence, calculated upon that occasion to strike the most sceptical with awe and astonishment.

It may not be amiss to observe to some of our readers, who may not have the benefit of a solar telescope, that they may, if a clear day, have almost an equally advantageous view of his glorious scene, by taking a piece of common window glass, and holding the same over a candle until it is well blacked, and so look through it at the Sun, by which means the naked eye can, without injury, view that powerful luminous body: or, by taking a common pail of water out into the open air, leaving the Sun's rays free room to be reflected, the Moon will be seen slowly to pass over the Sun's surface in the water.

In conclusion, we trust that our readers will not let pass this fine opportunity of explaining to their children or servants, by exemplifying from Nature's own grand orrery, the eclipse of the Sun,—the infinite wisdom and omnipotence of their Creator.

W. M.

(To be continued, with a Map of Eclipses.)

HISTORY.

(Continued from p. 193.)

The commencement of the TENTH PERIOD is dated at the HEGIRA, or Flight of MAHOMET from Mecca, A. D. 622. This impostor, favoured by the peculiarly degraded state of the civilized world, made extensive conquests, and spread his doctrines by the power of the sword.

The empire of the SARACENS extended almost as widely as that of the Romans had done; but its duration was transitory, and it fell to pieces soon after the death of its founder.

The dissensions that took place among the successors of MAHOMET so weakened their power, that the TURKS, a tribe of the Huns, took advantage of their imbecility to establish their authority; and to facilitate this, they embraced the religion of the vanquished.

In this period the PERSIANS began to assume temporal power; they had before asserted their supremacy in the CHURCH, but they now insisted upon being considered as sovereign princes.

The TENTH PERIOD likewise witnessed the conquests of CHARLEMAGNE; but at his death, his vast empire being divided among his sons, bloody wars arose, and EUROPE, convulsed from one extremity to the other, seemed like one vast field of battle.

In BRITAIN, the *Danes*, *Saxons*, and *Normans*, successively made conquests. In GERMANY and ITALY, the conquests between the *Emperors* and the *Popes* desolated some of the finest countries in the world. The mind can scarcely form any idea of times more calamitous.

The ELEVENTH PERIOD commences with those wars called "the CRUSADES," undertaken at the instigation of the POPES, to recover *Judea*, or the *Holy Land*, from the dominion of the SARACENS. Vast multitudes poured down from every part of EUROPE to the conquest of PALESTINE, of which but few ever returned to their native land.

In the East, the conquests of JENGHIZ KHAN were rapid and extensive; and after him TAMERLANE carried his victorious arms over many countries. But the vast dominions of both these conquerors were divided into petty states after their death.

It would swell the limits of this article were we barely to mention the important events that have occurred in this period; suffice it to observe, that the EASTERN ROMAN, or GREEK EMPIRE, was dissolved by the taking of CONSTANTINOPLE by the TURKS.

AMERICA was discovered. The Moors were expelled from SPAIN. A REVOLUTION took place in ENGLAND, in which its monarch, CHARLES I. was put to death; and another in France, more recently, in which LOUIS XVI. experienced the same fate.

This period, likewise, is remarkable for astonishing discoveries in the ARTS and SCIENCES. Gunpowder, Printing, the Telescope, Clock and Watch-making, Aerostation, the Art of Procuring Light from Gas, the Power and Uses of Steam; and a thousand other useful and truly valuable inventions distinguish this period, as some of the most beneficial to mankind of any on record.

The General History of the World may also be divided into two great parts, called *Ancient* and *Modern*; the Advent of our Saviour separating them. The Ancient precedes our Lord, and contains 400½ years, or forty centuries, according to the Hebrew system; many calculations, however, differ from the Hebrew,—such as the Samaritan, which is computed to be 4305 years, or forty-three centuries; and the Septuagint, 4270 years, or forty-two centuries; yet the Hebrew, being the Scripture account, is that which is most generally followed.

ANCIENT HISTORY may be subdivided into SACRED and PROFANE. The *Sacred*, which treats of the works of God, and of his favourite people, includes forty centuries, from the Creation to Christ, and receives its authority from the BIBLE. It is divided into two parts, the *Old Testament*, closing 430 years before the birth of Our Saviour; and the *New Testament*, closing with the Revelation of St. John the Divine.

PROFANE HISTORY is shorter than the *SACRED*, by seventeen centuries, because it began that number of years after the Creation; and we have an account of it only from tradition. It includes twenty-three centuries, which may be divided into three parts or periods; namely, the *Uncertain*, containing five centuries; the *Fabulous*, ten; and the *Historical*, a happy period, in which that science began to be written and established upon more certain authority, including five centuries.

In order to facilitate the knowledge of History, the World is divided into different ages, as given in the beginning of this chapter.

Observation: on History, addressed to young Students.

History is among the most agreeable and instructive exercises to which young Students can apply themselves; for

it at once gives them an acquaintance with characters and events, and a familiarity with all the world. It not only gratifies that love of the heroic and the grand, which is inherent in our nature, but also, by setting before us what has happened in the world, prepares us to comprehend and bear whatever may happen to ourselves. There cannot, consequently, be a more important branch of KNOWLEDGE, than that which forms the judgment as to the sort of reading upon which the hours of relaxation may be occupied.

It too often happens that the desire, whether natural or acquired, which most young persons have for reading, is so far from being converted into the extremely beneficial instrument of good, which it might be, that, in fact, it becomes a cloak for vacuity of mind, and a source of insignificance and ignorance, which, once rooted, nothing can uproot. History, abounding with stupendous achievements and astonishing vicissitudes, and every way calculated to direct as well as to instruct the student, is too frequently read as a forced task; and the leisure hours which *History* ought delightfully, as well as profitably, to occupy, are worse than wasted upon the frivolous or fanciful rubbish of the circulating library. We do not assert, that all the contents of a circulating library are either useless or mischievous: the labours of Scott, Croly, Horace Smith, and some few others, are full of instruction as well as of amusement. But no works of fiction can be at all comparable to authentic history; and the generality of those which fill the shelves of the circulating library are calculated, by their unnatural incidents and characters, and their wild and utterly impossible events, to fill the minds of their readers with ridiculous notions, to disgust them with real life, and to pave the way to innumerable and terrible errors. Our young friends may safely rely upon our correctness in assuring them, that, if they will read History as an amusement, and not as an imposed task, they will, in tracing the causes and results of events, and the characters connected with them, not merely stock their minds with the most valuable species of human knowledge, but derive from the perusal of every volume of History more exquisite pleasure, than from reading a cart-load of ill-told and ridiculous fictions.

OPTICAL ILLUSIONS, ANTIPATHIES, AND SUPERSTITIONS.

"*I have seen it with my own eyes, and therefore cannot be mistaken!*" This remark has often been made, for a convincing proof of something mysterious or doubtful;—but, with great deference to those who are so confident of the certainty of what their eyes have seen, it may be easily proved, that the eyes are often deceived; and it is this kind of deception that has given rise to the idle stories of ghosts and apparitions. We will first relate some instances of the kind, and then give reasons to shew that

that many persons think to be strange appearances, are nothing but optical illusions. Seafaring men are much addicted to these fancies, and many of them who have rounded the *Cape of Good Hope*, and experienced the storms of the Mosambique, will seriously tell of that appearance which they call the "*Flying Dutchman*," and which, they say, is visible before them, or a little a-head of the ship, in dark and tempestuous weather, and whose

presence is ominous of shipwreck: the strange stories about this phantom are really believed by many, because "they have seen it with their own eyes, and therefore cannot be deceived." The whole watch of a ship's company imagined they saw a man in the main-top one stormy night, who had fallen overboard and was lost some days previously; and to dispute the fact was considered quite an insult, when it was asserted by so many witnesses. About two centuries ago, some sailors had landed, and taking provisions and spirituous liquors, they went to visit the *Volcano of Mount Stromboli*; and, as it was stated, they saw, during their repast, a certain publican, who resided at *Wapping*, passing them with great speed, and dashing into the crater, or mouth of the volcano, was seen no more. On the return of the ship, one of the sailors meeting an acquaintance who used the house of this publican, he inquired if he was living, and was answered that he was dead; "then," said the seaman, "I can tell you when he died, for I and my messmates saw him jump into a volcano;" and he actually stated the day and hour when he saw this singular phenomenon, and it agreed very nearly with the time of the publican's death. The friends and executors of the deceased summoned the sailor before a magistrate to answer for slander and defamation of the defunct, as being both painful to the feelings, and injurious to the interests of the surviving relatives; but this step only made the matter worse, for all Jack's companions swore to the fact, and they even described the publican's apparel to the very buttons on his coat, when separately interrogated.

A woman, in one of the northern counties, met with a man whom she knew, and addressed him on a subject of a family affair; but receiving no answer, she turned round as he passed her to reproach him for his taciturnity, but he walked quickly on; however, as she had to pass his house, she determined to call and tell his wife of his behaviour, but, on knocking at the door, it was opened by the man himself, at whose feet she fell in a swoon, and was not able for some time to tell the cause of her alarm. This fact is communicated by a person who resided on the spot, and knew that the man had not been out of his house for some hours before the event happened:

Two boys, about seven and eight years of age, who slept together, gave a remarkable instance of this optical illusion. One of them (the younger) waking in the morning found that his companion was risen and gone; but turning round, he beheld his bedfellow standing by a large chest of apples that stood in the room, and eating one very voraciously: "Hollo, there!" said the waking boy, "you must be fond indeed of apples to begin eating them so greedily the first thing in the morning;" then, jumping up, he saw the vision walk out of the room; but with astonishment, when he came to the hall door, he met the very boy just returning from an excursion of nearly two hours' bird-catching in a distant stubble-field. Yet he had seen him at the chest of apples a few minutes before with "his own eyes," and therefore could not be mistaken.

Now all these were fallacious, and shew how easily the senses may be deceived; but without going further we may reasonably endeavour to give some physical account of the causes that produce such effects; and the rather, because we would wish to efface from the mind every impression of belief in the superstitious notions that have been propagated with respect to them.

The story of Brutus having seen his own apparition the night before the battle of Pharsalia, has the addition of a conversation as well as an interview, and consequently

was an auricular as well as an optical illusion;* but it is to be accounted for on the same principles and by the same reasoning as the former instances.

To give the subject a sort of technical definition we might call these fancies "*waking dreams*," for in fact they are nothing else, and are produced in the same way, that is, by an effect on the nerves; and this effect of sensation pictures on the sensitive organ a figure of that which dwells upon, and impresses the structure of the brain.

Inward perception can give to the outward organs as well as take from them the pictures, reflections, and representations of things; and this, too, without any vivification of the natural organs of sensation; in dreams we see, hear, and talk, by imagination, and the last sometimes audibly, so that by a strong impulse of excited nervous action that constitutes a conception of ideas, the tongue is set in motion, and the faculty of speech involuntarily exercised. In like manner, such an internal tangibility on the optic muscles, by the disturbed perceptive nerve of the brain, will give appearances to the eye, or a sensation of appearances similar to something that outward vision has communicated, like a reflection of strongly defined images from a highly illuminated surface.

What is it then that overcomes our powers of vision, and deceives the eye? It is a total absorption of sensation by one particular region of the brain, which, acting violently, swells it into an extension that precludes the introduction of outward influences, which would break the illusion and convince us that it was not a vision of the eye, but a mere phantom of the mind: such frequent visitations are strong indications of incipient *mania*.

An instance of this kind experimentally corroborative of what we wish to prove, is stated in a medical publication, by an eminent practitioner. "I was called," says he, "to attend a patient under strong delusions of mind, and, on coming to his bed-side, he told me that a person was continually looking at him whichever way he turned his eyes, and that he could not get rid of the intruder." I endeavoured to dissuade him from that notion, and placing myself before the opening of the curtains, asked him if the stranger was not gone. "Yes, from there," said the patient, "but he is peeping through at the foot of the bed." I then placed myself in that situation, and again asked him the same question. "No, Sir," he replied, "he is not gone indeed, for though you fill up that space, he is peering upon me, over your shoulders."

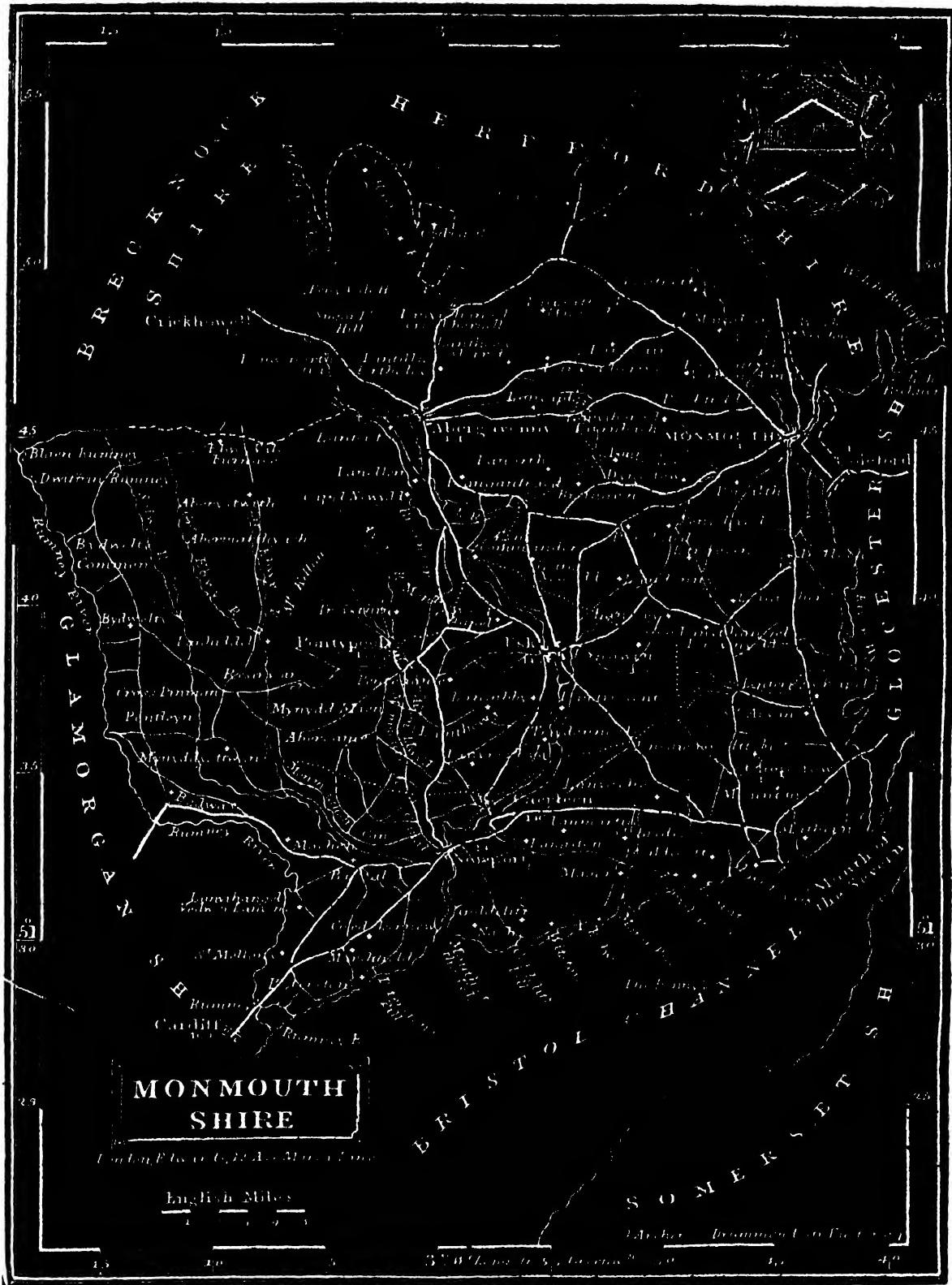
This *visum phantasmia*, or illusion of the sight, was unquestionably the effect of a disordered brain; and this disorder of the brain, if not the effect of accident, is caused by dwelling too long and too intensely on any one particular subject, by which all the nerves of the brain become entirely occupied and incapable of other impressions, at least of banishing the strongest one.

(*To be continued.*)

* Brutus, sitting in his tent at midnight, before the battle of Pharsalia, saw (or imagined he saw) his own apparition which warned him that he should meet him again at Philippi, to which Brutus replied, that he accepted the invitation.

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One Penny.



MONMOUTHSHIRE.

MONMOUTHSHIRE was formerly a part of Wales, but it is now comprised in England. It takes its name from *Monmouth*, its chief town, and is included in the Oxford circuit. It continued to form part of Wales till near the end of the reign of Charles II.

It is bounded on the north by Herefordshire; on the east by Gloucestershire; on the south by the river *Usk*; and on the west by Wales.

In the time of the Romans, this county formed part of the territory of the *Silures*, of whom mention is made in the account of Herefordshire, which also formed part of that district. It is about thirty miles in length, twenty in breadth, and eighty-four in circumference. It is divided into six hundreds, which contain 7 market towns, and 127 parishes.

The air of this county is esteemed temperate and healthy; and the soil for the most part rich and fruitful, though mountainous and woody. The hills feed great numbers of sheep and cattle; and the valleys produce plenty of corn and pasture.

Monmouthshire abounds in limestone and coals, and its principal manufactures are those of iron.

Its chief rivers are the *Severn*, the *Wye*, the *Monnow*, the *Romney*, and *Usk*, all of which abound with salmon and trout.

Its principal towns are *Monmouth*, *Newport*, *Chepstow*, *Abergavenny*, *Caerleon*, and *Usk*.

Monmouth is supposed to have been so named from its being seated at the mouth of the *Monnow*. It is a large and neat town, and has been very considerable ever since the Conquest. It formerly had a castle, a very stately edifice, now in ruins, which is supposed to have been built by JOHN BYRON, of Monmouth, from whom it came to the family of LIVCASTER. In this castle was born Henry V. in 1388; hence he was styled Henry of Monmouth. The church is a very handsome building.

Monmouth was incorporated by Charles I., and is governed by two bailiffs, fifteen common council-men, and a town-clerk. Its chief trade is with Bristol, by the *Wye*, that runs into the *Severn*. From the pleasantness of its situation many respectable families have chosen it as their residence.

ABERGAVENNY, a large and flourishing town, is seated on the river *Gavenny*, hence its name. This town was formerly walled in, and had a castle, some of whose ruins still remain. The *Gavenny* falls into the *Usk*, near the town, over which it has a fine stone bridge of fifteen arches. This town has a great thoroughfare from the western parts of Wales, to Bristol, Bath, and Gloucester. Its chief trade is in flannels. The situation of *Abergavenny* is one of the most beautiful that can be conceived; it stands at the extremity of a pass, with bold projecting hills on each side. It was once a corporate town, and during the late war it was made a dépôt for French prisoners. The town was once fortified, but the four gothic gates have been recently removed. The ruins of its ancient castle are much dilapidated. The fine old bridge over the *Usk* is in good preservation, and is said to be coeval with the castle.

CAERLEON, once the metropolis of Wales, and see of an archbishop, is seated on the *Usk*, 26 miles from Bristol. It is now fallen greatly into decay. Here are some ruins of a Roman amphitheatre; and several coins, and other remains of antiquity, have been discovered, at different periods, in the town and its vicinity. In the time

of the Britons, it was a kind of university; and King Arthur is said to have held his court here.

CHEPSTOW, about 16 miles from Bristol, is seated near the mouth of the river *Wye*, over which it has an excellent bridge. Its name is of Saxon original, signifying a place of trade and commerce. The tide rises higher here than in any part of Europe: sometimes it rises to the extraordinary height of sixty feet perpendicular. It was formerly a place of great note, and was much frequented, but it is now fallen into decay. Its streets are narrow, and the houses are mean. It was formerly walled in, and had a castle. The chief gateway has a very venerable aspect; and although it was the most ancient part of the whole structure, and of Norman origin, is nearly perfect. This place is supposed to have risen from the ruins of an ancient Roman city, at the distance of four miles from it — “*Venta Silurum*.” This is the port for all the towns that stand on the rivers *Wye* and *Lug*. Ships of heavy burden may come up to it, and the tide comes in with as much rage as at Bristol. A beautiful Roman pavement was discovered here in 1689. It has a very considerable trade with Portugal and the Baltic. Great quantities of salmon are caught in the *Severn* and *Wye*, and sent from *Chepstow* to London, and other places. Part of the old priory church of this place is now used as a parish church. *Chepstow* is 135 miles from London.

NEWPORT is a very considerable town, with a good haven, and carries on an excellent trade with the different places that lie on the shore of the Bristol Channel. It is seated on a high hill, near the shore, and is said to have had its rise from the decay of the old port, *Caerleon*. It had formerly a strong and very spacious castle, near which was a Roman military way, called *Julia Strata*. *Newport* is 12 miles from *Cardiff*, 16 from *Bristol*, and 147 from *London*.

PONTRHYDOL is situated almost in the centre of the county, upon the river *Aron*, which falls into the *Usk*, a little below *Caerleon*. This town, which has gradually risen up in the course of the last century, derives its origin from the mineral treasures which lie concealed in the surrounding country. Immense quantities of iron-ore and coal are dug up here, and in its vicinity. It is chiefly noted for its iron mills, and its great manufacture of *Japan* ware. It is 15 miles from *Monmouth*, and 150 from *London*.

USK, a small town, is situated in about the middle of the county, upon a river of the same name. It formerly had a strong castle, upon the side of a hill, which was used as a Welsh garrison against the incursions of the English. The remains of the castle are now covered with ivy. It is 6 miles from *Pontypool*, 13 from *Monmouth*, and 144 from *London*.

The most remarkable persons who were natives of this county were *Geoffrey of Monmouth*, a celebrated British historian; and *King Henry V.*, who was surnamed *Monmouth*, from the place of his birth. To these may be added, *George, Lord Abergavenny*, a gallant commander in the reign of *Henry VII.*, who particularly distinguished himself in the battle on Blackheath against the Cornish.

Geoffrey of Monmouth was first archdeacon of *Monmouth*, and afterwards bishop of *St. Asaph*, which see he resigned, and retired to the Monastery of *Abingdon*, of which he was abbot, about 1150.

Henry V., the son and successor of *Henry IV.*, was remarkable in his youth for debauchery. He was

proclaimed King of England, March 20th, 1413. When raised to the throne, however, he bade adieu to all the companions of his licentious hours, and displayed the great and virtuous monarch. He invaded France, and after taking Harfleur, and ravaging Normandy, he fought the celebrated battle of Agincourt, in which his 15,000 men obtained a decisive victory over the French army of more than four times the number. He then returned to England; but three years afterwards he went again to France, where he married Catherine, the daughter of the French king. The greatest blot in his character was his persecution of the Wickliffites, or Lollards. But this was more owing to the superstition of the times than to his own natural temper, he often expressing a dislike to such proceedings. Sir John Oldcastle, baron of Cobham, who was looked upon as the chief protector of the Lollards,* was the first of the nobility who suffered on account of religion. Henry was, in all other respects, scrupulously just in his administration, and in the art of war was considered not to have had his equal.

Monmouthshire sends 4 members to parliament; namely, 2 for the county, and 2 for Monmouth, Newport, and Usk.

POPULATION OF THE CHIEF TOWNS.

Monmouth, & Par.	4,916	Caerleon, & Par.	1,071
Abergavenny, & Par.	4,230	Pontypool	10,280
Newport, & Par.	7,062	Usk, & Par.	1,775
Chepstow, & Par.	3,524		

OPTICAL ILLUSIONS, ANTIPATHIES, AND SUPERSTITIONS.

(Continued from page 504.)

To apply this to the cases recited of the sailors as to the Flying Dutchman, the apparition of the man at main-top, and the other affair of Mount Stromboli,—we need only remark on the strange superstition of seafaring men in general, which is proverbially apparent, or such sums as are often paid would not be so easily obtained for what is called a *child's caul*, and which many of them believe is a certain preventive of drowning. Such idle notions as this serve to shew how easily men of that useful and adventurous profession are to be deceived. The woman who saw an absent man, and the boy who saw his bed-fellow eating apples, were both of them strongly influenced by ideas on the respective subjects that occupied their minds; the gossip on family affairs (perhaps slander), the boy on his appetite for the fruit which he fancied his companion was so lusciously enjoying, and therefore the images were reflected like realities, and as if they actually existed.

* The *Lollards* were originally a sect of Christians that first rose in Germany, about the beginning of the 14th century—so called from its author, *Walter Lollard*. They rejected the mass, extreme unction, and penances for sins. This name was afterwards given to *Wickliff* and his followers by way of reproach, from an affinity between some of their tenets and those of the *Lollards*, who, in the reigns of Henry III. and Henry V., were accounted heretics.

By the term *unction* is meant the act of anointing, or rubbing with oil. The Hebrews anointed both their kings and high-priests at the ceremony of their inauguration. The unction of kings is supposed to be a ceremony introduced very late among Christian princes. In the ancient Christian church unction always accompanied baptism and confirmation. Extreme unction, or anointing persons in the article of death, was also practised by the ancient Christians, in compliance with the precept of St. James, (chap. v. 14, 15); and the Romish church have advanced it to the dignity of a sacrament.

Extreme delicacy of the nervous system admits most readily of those deceptive influences, and as they affect the visual organs, they have been called *vapours*, a term rather anomalous, since they are not related to any thing that imposes on the sight, but to something that deludes the understanding, and may rather deserve the name of *dementiae*. Vapours indeed are deceptions of sight, which make objects appear different from what they really are, and mostly arise from physical infirmity, or vitiation of the fluids by which the organs of sight become affected, as in the cause of a jaundice, &c.; but then there is a form of substance either of light or air, on which the eye draws fictitious images, or paints them in perverted colours, they are not like entire illusions altogether unsubstantial.

There are many persons, perhaps, who will say, “How is it possible to see or imagine an object that is not caused by some interrening substance or form?” This question can be practically answered by any one who has suffered under an *incubus*, or what is vulgarly called a “night-mare;” a person so suffering often imagines and thinks he sees a hideous monster holding him fast; and so strong is the impression, that as the circulation returns the phantom gradually releases its prey, and seems to retire with as much regularity, as if it were a real animal being: this proves beyond all doubt the possibility of the thing, and the probability has been sufficiently argued upon philosophical principles. The *night-mare* is not a monster, nor any being or form, but a stagnation of the sanguiferous circulation, affecting all the nerves of the brain, and exhibiting inwardly an apparition that has no intervening form between the light and the optic nerve; it has, therefore, no substance, yet it is distinctly seen through an illusion, and only an illusion.

Travellers who have crossed the deserts of Arabia have often experienced that illusion, which is called the *mirage*; it appears at a distance like a lake of water, at which the parched individuals hope to quench their burning thirst, but their hopes are disappointed, and each distressed *Tantalus* beholds the cup receding from his eager lips; the airy vision still keeps aloof, till it vanishes in the shades of night, and cruelly mocks the longing sufferers: it is nothing but an optical illusion.

In the Bay of Naples there is sometimes an extraordinary appearance of castles, houses, &c. in the air: these fantastical forms are said by the natives to be caused by the pranks and the whimsies of the fairy *Morgiana*, whom they consider to be resident there; but, that they are reflections of the forms of substances, modified by the medium through which their shades are transferred, is doubtless the real fact. We read in the Apocrypha of a similar phenomenon, which occurred at Jerusalem two or three days before the siege of that place by *Antiochus Epiphanes*; then, and for some time previous, strange appearances had been observed in the air, as of horsemen and chariots of war running to and fro, and charging upon each other with great fury and dexterity; these strange and terrific sights did not fail of imparting terror to the astonished inhabitants of the city, as they superstitiously imputed them to an omen of Divine displeasure, and that they should be given into the hands of their enemies: the probability is, that Jerusalem, being built upon a hill, and the troops of *Antiochus* assembling on the

* *Tantalus*, one punished for his cruelty and treachery by being set up to the chin in water, of which, though burning with raging thirst, he could not drink—hence the term *tantalising*, when a person is not allowed to enjoy what has been promised, or expected.

plains surrounded by hills, the strong refraction of the sun's rays on a moistened atmosphere, reflected from the mountains contiguous to the army of Antiochus, the shadows of the exercising combatants to the atmosphere about Jerusalem, and thus, as in a mirror, exhibited the sham engagements of the practising soldiers of their intended assailants' army: effects like these of the fairy Morgiana and the appearance of aerial combatants over Jerusalem are not alone in the world, though such singularities are not frequent enough to take them quite off the list of miraculous events; they are, however, only to be called *illusions* until they are understood, and then they are seen to have tangible and substantial causes; yet, when taken as realities independent of their causes, they are *illusions*, and shew that what we see with our eyes may be a deception. We may find it necessary to resume this part of the subject at a future opportunity, but at present we will pass on to a consideration of the next proposition, viz. Antipathies;—these, like the former, will be found to depend upon the nervous system, though in some measure they may be influenced by custom and education; they are of two kinds, mental and physical; the former peculiar to man and other animals, the latter to those and also to vegetables, as in the nature of the sensitive plant.

(*To be continued.*)

CONTENTMENT.

CONTENTMENT is not only a virtue, it is also an actual and an inexhaustible treasure. The man who possesses Contentment bids defiance to all those minor evils with which half mankind are afflicted; and converts the most disadvantageous circumstances into comparative advantages. To recommend with any considerable degree of prolixity the practice of those virtues which immediately conduce to a man's own comfort and enjoyment, ought to be unnecessary; but so perverse is our nature, that we actually seem to strive to raise up formidable enemies to ourselves, and to banish all those pursuits and practices by which we might gain both in virtue and in enjoyment.

If Contentment were productive of no other good effect than the tranquillity and placid enjoyment of which its votaries are usually possessed, we should do well to embrace it, and to make it abide with us unceasingly. But it is not merely in the calm and tranquil scenes of life that Contentment is our friend. It is merely the negative of discontent; it causes us to enjoy enjoyment, and to be comfortable amid consort; it preserves us from heartless wishes, and makes us satisfied with sufficiency. But it is in embarrassment, suffering, and difficulty, that Contentment exerts its powers, and bears us up against annoyances and privations, under which a fretful and impatient soul would inevitably be crushed.

Moreover, Contentment with our own lot, disposes our minds to a proper feeling for those who are less happily situated than we are. He whose mind is soured by perpetual and unavailing discontent, cannot sympathize in the sorrows, or form any just idea of the distresses of others. To his jaundiced judgment, his own sufferings, or inconveniences, seem so great, that those of all others sink into insignificance by comparison with them. He is so occupied in bewailing his own real or imaginary evils, that he has neither time, nor benevolence to bestow upon others. But he who is blessed with Content is so happy in the circumstances and situation in which providence has placed him, that his heart melts at the sight of dis-

tress, and his ears are ever open to the cry of misery. He gratefully contrasts his own circumstances, happy, however humble they may be, with those of the afflicted or unfortunate; and the grateful rush of feeling to God which that contrast gives rise to, is ever combined with a proportionate desire to offer to him that most acceptable sacrifice—an alleviation of his creatures' misery.

Contentment, in short, includes within itself that earthly happiness which surly and discontented cynics would fain persuade us has no existence; and which the idle, the ambitious, the dissipated, and the wicked, perpetually pursue, but never overtake.

CONTENTION.*

CONTENTION is the cause of innumerable evils, and is offensive to God and injurious to man. It almost always happens that Contention takes its origin in the most trivial or contemptible circumstances; but it frequently produces the most extensively disastrous results.

Even where Contention is confined to individuals, it embitters every circumstance which would otherwise be productive of satisfaction, and causes a constant irritation of mind and partial disease of body. Contentious persons cannot be happy. What would to differently constituted minds be mere matter of indifference, or at most the subject of passing mirth, is to them a sufficient cause for deadly and perpetuated hatred. There is void in their souls which must be filled, and can only be filled by animosity and opposition. It is a real misfortune for the world when spirits of this description fill any situations of national importance and power. Then their contentious tempers are a real and a mighty curse to thousands.

Carrying into the administration of public affairs the malignant and litigious feelings of their individual dispositions, they plunge into sanguinary and destructive wars nations which would otherwise be profitably, peaceably, and laudably employed in manufactures, commerce, and agriculture. To them it matters not that nations are deprived of their youthful population; that to supply the enormous expenses of war, taxes must be levied of so exorbitant a nature as to paralyze the industry of the trading part of the community, and place comforts, and even necessities, absolutely out of the reach of those who depend upon the day's labour for the day's bread.

Widowed mothers may mourn the death or mutilation of the industrious sons, upon whose labour depended the support of infirmity or age. Fathers may be rendered childless; wives may be widowed; hearths, once the scene of perpetual cheerfulness and industry, may be for ever desolated; but the contentious shrink not from their purpose. War they love, and war they will have at any sacrifice and on any pretext. This is a strong representation; but the history of all ages, and of almost all countries, attests its correctness.

In public life, Contention is in the highest degree criminal; and though the difference of circumstances renders it less odiously criminal in a private sphere, it is equally disgraceful to the individual, and repugnant to the letter and spirit of the Christian code.

"Blessed are the peace-makers, for they shall inherit the kingdom of heaven," says that divine volume, which abounds in precepts of moral beauty and assurances of most gracious mercy. Those who have Contention are always disliked and generally shunned. The disposition is exceedingly hateful, and the consequences of indulging it are always disagreeable, and not unfrequently fatal.

OBSERVATIONS ON THE USE AND IMPORTANCE OF THE SCIENCE OF ASTRONOMY.

Of all the SCIENCES cultivated by mankind, ASTRONOMY is acknowledged to be the most sublime, the most interesting, and the most useful. By the knowledge derived from this science, not only the bulk of the earth is discovered, the situation and extent of the countries and kingdoms upon it ascertained, trade and commerce carried on to the remotest parts of the earth, and the various products of several countries distributed for the health, comfort, and convenience of its inhabitants; but our very faculties are enlarged with the grandeur of the ideas it conveys, our minds exalted above the low contracted prejudices of the vulgar, and our understandings clearly convinced, and affected with the conviction of the existence, wisdom, power, goodness, and superintendence of the SUPREME BEING!

From this branch of knowledge, we learn by what means, or laws, the Almighty carries on, and continues the admirable harmony, order, and connexion observable throughout the planetary system; and are led by very powerful arguments to form the pleasing deduction, that minds capable of such deep researches, not only derive their origin from that adorable Being, but are also incited to aspire after a more perfect knowledge of his nature, and a stricter conformity to his will.

By Astronomy, we discover that the Earth is at so great a distance from the Sun, that if seen from thence, it would appear no larger than a point, although its circumference is known to be upwards of 25,000 miles; yet that distance is so small compared with the distance of the *fixed stars*, that if the orbit in which the Earth moves round the Sun were solid, and seen from the nearest star, it would likewise appear no larger than a point, although it is at least 162,000,000 of miles in diameter; for the Earth in going round the Sun is 162,000,000 of miles nearer to some of the stars at one time of the year than at another; and yet, their apparent magnitudes, situations, and distances from one another still remain the same: and a telescope, which magnifies above 200 times, does not sensibly magnify them;—which proves them to be at least 400,000 times farther from us than we are from the Sun.

It is not to be imagined that all the stars are placed in one concave surface, so as to be equally distant from us; but that they are scattered at immense distances from one another through unlimited space, so that there may be as great a distance between any two neighbouring stars, as between our Sun and those which are nearest to him; therefore, an observer, who is nearest any fixed star, will look upon it alone as a *real Sun*, and consider the rest as so many shining points, placed at equal distances from him in the firmament.

By the help of telescopes, we discover thousands of stars which are invisible to the naked eye; and the better our glasses are, still the more become visible, so that we can set no limits either to their number or their distance.

The Sun appears very bright and large in comparison of the *fixed stars*, because we keep constantly near the Sun, in comparison to the immense distance we are from the stars; for, the spectator placed as near to any star as we are to the Sun, would see that star a body as large and bright as the Sun appears to us; and a spectator, as far distant from the Sun as we are from the stars, would see the Sun as small as we see a star, divested of all its circumvolving planets, and would reckon it one of the stars in numbering them.

The stars being at such immense distances from the Sun, cannot possibly receive from him so strong a light as they seem to have, nor any brightness sufficient to make them visible to us; for the Sun's rays must be so scattered and dissipated before they reach such remote objects, that they can never be transmitted back to our eyes, so as to render these objects visible by reflection. The stars therefore shine with their own native and unborrowed lustre as the Sun does; and since each particular star, as well as the Sun, is confined to a particular portion of space, it is plain that the stars are of the same nature with the Sun.

It is in no way probable that the Almighty, who orders all things with infinite wisdom, and does nothing in vain, should create so many glorious suns, fit for so many important purposes, and place them at such distances from one another, without proper objects near enough to be benefited by their influences. Whoever imagines they were created only to give a faint glimmering light to the inhabitants of the globe, must have a very superficial knowledge of astronomy, and a mean opinion of the Divine wisdom; since, by an infinitely less exertion of creating power, the Deity would have given our Earth much more light by one single additional Moon.

Instead then of *one Sun* and *one World* only in the universe, as the unskillful in astronomy imagine, that science discovers to us such an inconceivable number of *suns*, *systems*, and *worlds*, dispersed through boundless space, that if our Sun, with all the planets, moons, and comets belonging to it, were annihilated, there would be no more razed out of the creation than a grain of sand from the sea-shore; the space they possess being comparatively so small, that it would scarcely be a sensible blank in the universe. Although the "Glorious Stars," the outermost of our planets, revolves about the Sun in an orbit at the distance of 1,800,000,000 of miles from the Sun, and some of our *comets* are supposed to make some thousand millions of miles beyond the orbit of Herschel; yet, at that amazing distance, they are incomparably nearer to the Sun than to any of the stars, as is evident from their keeping off the attractive power of all the stars, and returning periodically by virtue of the Sun's attraction.

From what we know of our system, it may be reasonably concluded, that all the rest are with equal wisdom contrived, situated and provided with accommodations for rational inhabitants.

To an attentive observer it will appear highly probable, that the planets, together with their attendants, called satellites or moons, are much of the same nature with our Earth, and destined for the like purposes; for they are solid opaque globes, capable of supporting animals and vegetables;—some of them are larger, some less, and some much about the size of our Earth. They all circulate round the Sun as the Earth does, in a shorter or longer time, according to their respective distances from him; and have, where it would not be inconvenient, regular returns of summer and winter, spring and autumn. They have warmer and colder climates, as the various productions of our Earth require; and in such as afford a possibility of discovering it, we observe a regular motion round their axis, like that of our Earth, causing an alternate return of day and night, which is necessary for labour, rest, and vegetation, and that all parts of their surfaces may be exposed to the rays of the Sun.

* *On HERSCHEL.* The diameter of this planet is about 35,600 English miles: its bulk is therefore about eighty-three times that of the Earth.

Such of the planets as are farthest from the Sun, and therefore enjoy least of his light, have that deficiency made up by several moons, which constantly accompany and revolve about them, as our Moon revolves about the Earth. The remotest planet has, or and above, a broad ring encompassing it, which, like a lucid zone in the heavens, reflects the Sun's light very copiously on that planet: so that if the remoter planets have the Sun's light fainter by day than we, they have an addition made to it, morning and evening, by one or more of their moons, and a greater quantity of light in the night-time.

On the surface of the Moon, because it is nearer to us than any other of the celestial bodies, we discover a nearer resemblance to our Earth: for, by the assistance of telescopes, we observe the Moon to be full of high mountains, large valleys, and deep cavities. These similarities leave us no room to doubt, but that all the planets and moons in the system are designed as commodious habitations for creatures endowed with capacities of knowing and adoring their beneficent Creator.

Since the fixed stars are prodigious spheres of fire, like our Sun, and at inconceivable distances from one another as well as from us, it is reasonable to conclude they are made for the same purposes that the Sun is; each to bestow light, heat, and vegetation, on a certain number of inhabited planets, kept by gravitation within the sphere of its activity.

What an angst, what an amazing conception, if human imagination can conceive it, does this give of the works of the Creator! Thousands of thousands of suns, multiplied without end, and ranged all around us, at immense distances from each other, attended by ten thousand times ten thousand worlds, all in rapid motion, yet calm, regular, and harmonious, invariably keeping the paths prescribed them; and these worlds peopled with myriads of intelligent beings, formed for endless progression in perfection and felicity.

If so much power, wisdom, goodness, and magnificence, is displayed in the material creation, which is the least considerable part of the universe, how great, how wise, how good must He be, who made and governs the whole!

It is not to be doubted but Astronomy was invented from the beginning of the world. As there is nothing more surprising than the regularity of those great luminous bodies, that turn incessantly round the earth, it is easy to judge, that one of the first curiosities of mankind was to consider their causes, and to observe their periods. But it was not curiosity only that induced men to apply themselves to astronomical speculations; necessity itself may be said to have obliged them to it: for if the seasons are not observed, which are distinguished by the motion of the Sun, it is impossible to succeed in agriculture. If the times proper for making voyages were not previously known, commerce could not be carried on. If the duration of the month and year were not determined, a certain order could not be established in civil affairs, and the days allotted to the exercise of religion be fixed. Thus, as neither agriculture, commerce, polity, nor religion, could dispense with the want of Astronomy, it is evident that mankind were obliged to apply themselves to that science from the beginning of the world. Accordingly, from the most early times, men of genius and learning, have appeared, in different countries and ages, who applied themselves to the study of astronomy, and made

successive improvements therein, till the great Sir Isaac Newton, the glory of the nation, put the finishing hand to

their labours, and carried the science to an amazing degree of perfection.

Astronomy is sometimes divided into the *old* and the *new*. The old astronomy is that which supposes the Earth fixed and quiescent in the centre, and that the heavenly bodies perform their revolutions round it. This hypothesis is followed by Ptolemy, in his "*Almagest*," and thence called the "*Ptolemaic system*." (See page 72.) The new astronomy is that which has been generally followed since the time of Copernicus, who revived the Pythagorean, or "*true solar system*." (See the *Copernican System*, page 17.)

SOLAR SYSTEM.

The Solar System comprises the Sun, and the following primary planets, together with their satellites and comets:—

	Diameter in Miles.	Bulk, the Earth being 1.	Hourly Motio n in Miles.
SUN . . .	883,217	138,000	—
MERCURY . . .	37	3,123	15
VENUS . . .	68	7,702	9
EARTH . . .	93	7,916	1
MARS . . .	144	4,398	24
VESTA . . .	223	unknown	unknown
JUNO . . .	253	1,545	35
PALLAS . . .	263	2,280	42
CERES . . .	263	1,761	100
JUPITER . . .	490	89,170	1,400
SATURN . . .	900	79,042	1,000
HERSCHEL . . .	1,800	35,100	90
			15,000

N. B. It will be seen by the above table, that we are carried along with the Earth in her orbit, at the astonishing rate of 1,632,000 miles per day.

The time occupied by Mercury, in going round the Sun, is 87 days; Venus, 224 days; the Earth, 365 days; Mars, 657 days; Vesta, 1,913 days; Juno, 1,586 days; Pallas, 1,680 days; Ceres, 1,980 days; Jupiter, 4,332 days; Saturn, 10,759 days; Herschel, 30,688 days.

The Moon is distant from the Earth 240,000 miles the inclination of her orbit to the ecliptic is $5^{\circ} 50'$; her revolution round the Earth is 27 days 7 hours and minutes; her diameter is 2,159 miles. That of the Earth is 7,916; of Saturn, 79,042; of Jupiter, 89,170; of Herschel, 35,100; and the Sun, the astonishing number of 883,217 miles.

The bulk of the Sun is 1,300,000 times greater than that of the Earth. The Moon is about 50 times smaller than the EARTH. Satellites always present the same face to the Earth.

GRAND CONJUNCTION.

In 1748, the attention of astronomers was attracted to the conjunction of five planets, in one sign of the zodiac a phenomenon that had not before occurred since the creation of the universe.

NUMBER OF STARS.

Of the STARS in the British Catalogue there are many only visible through a telescope; nor does the eye ever see more than a thousand at the same time in the clearest

heaven; yet the number is probably infinite. From the first to the sixth magnitude inclusive, the total number of STARS is 3,128.

MIRROR OF THE MONTH.

JULY.

This month, by the ROMANS, was originally called *Quintilis*, from the Latin word *quincus*, five, because it was the fifth month in the year, before Numa added January and February. It afterwards received the name of *Julius*, (hence July,) in honour of Julius Cæsar.

The Saxons called July *Heu-monath*, signifying *leafy-month*, or *foliage-month*—the Saxon word *heu*, and the German *hain*, meaning wood or trees. They also called it *Hey-monath* or *Hay-month*, because in July they generally made their *hay* harvest.

The principal days of dedication in the modern English calendar in this month, are the 15th, in honour of St. SWITHIN, a bishop of Winchester, in the ninth century; and the 25th, consecrated to the memory of the apostle, *St. James the Great*.

St. SWITHIN first put on the monastic habit in the old monastery at Winchester. He was of noble parentage, and passed his youth in the study of grammar, philosophy, and the Scriptures. SWITHIN was promoted to holy orders by HELMSTAN, bishop of Winchester, at whose death, in 852, King Ethelwolf granted him the see. In this he continued 11 years, and died in 868.

St. JAMES, surnamed the *Great*, or the Elder, to distinguish him from *James the Less*, or Younger, was a native of Galilee, and left his property to follow Christ. Of his ardent zeal no other proof is necessary than his becoming the victim of *Herod Agrippa*. The Spaniards esteem him their tutelar saint.

July brings summer to the full. It is generally accounted the hottest month in the year. The excessive heat of this month frequently occasions an evaporation, something like steam, only not so visible, from the surface of the earth and waters, which forms into clouds, and afterwards falls again to the earth as rain. These summer storms are generally accompanied by thunder and lightning; and from the almost constant process which is going on during the heat of July, they are usually very frequent and heavy, and often deluge the country with excessive floods, and wash down the full grown corn. Hence much loss sometimes arises to the industrious farmer from these heavy rains, by the destruction of his crops; and when an unusually wet season happens, the corn growing on low grounds has sometimes to be reaped in winter, and then carried to higher lands to dry, as was the case several years back.

The intense heat of July is sometimes such, that it invites us eagerly to seek refreshing shades and the luxury of bathing, which, at this time, is as healthful as it is agreeable. All nature seems pervaded by an oppressive sense of heat. "The birds," says a popular and delightful author, "are silent." The little brooks are dried up;—the earth is chapped with parching;—the shadows of the trees are particularly grateful, heavy, and still;—the oaks, which are freshest, because latest in leaf, form noble clumpy canopies, looking, as you lie under them, of a strong and emulous green against the blue sky. The

traveller delights to cut across the country through the fields and leafy lanes. The cattle get into the shade, or stand in the water. The active and air-cutting swallows now beginning to assemble for emigration, seek their prey about the shady places, where the insects, though of differently compounded natures, "fleshless and bloodless," seem to get for coolness, as they do at other times for warmth. The sound of insects is the only audible thing, increasing rather than lessening the sense of quiet, by its gentle contrast.

The farmer's labours in this month are many and important. The corn harvest commences in the southern counties, but the grateful use of the sickle does not become general till August; and in some parts it is even protracted to September, and sometimes to October. The hay harvest concludes in July; and flax and hemp are now gathered in. Fish are generally plentiful in this month, especially *pilchards*, which now appear in vast shoals around the coast of Cornwall. The fruits and flowers, during this month, present an infinite variety of beauties, which greatly delight the eye of a lover of nature. The fragrant and beautiful blossoms of the orchards, which we have before admired, have become perfected into ripening fruit; and our gardens display the richness of the wholesome and agreeable currant, the strawberry, and the raspberry, which are now fully ripe. In addition to other floral beauties, the various species of lily now burst into flower; the infinite varied hollyhock, the convolvulus, the lady's slipper, the sun-flower, and numerous other brilliant plants, succeed the pinks and roses. In every hedge we see the vine-weed creeping; and the woods teem with the deep orange-coloured berries of the mountain ash. The different tribes of insects, which, for the most part, are hatched in the spring, are now in full vigour—

"Chirping out their careless lives
On the soft beds of thyme-besprinkled turf."

But the plenitude of their enjoyment is limited indeed, for they die at the approach of winter.

"Behold the insect race, ordained to keep
The lazy Sabbath of a half year's sleep;
Entombed, beneath the filthy web they lie,
And wait the influence of a kinder sky.
When vernal sunbeams pierce their dark retreat,
The heaving tomb distends with vital heat;
The full-formed brood, impatient of their cell,
Start from their trance, and burst their silken shell;
Trembling awhile they stand, and scarcely dare
To launch at once upon the untried air:
At length assured, they catch the favouring gale,
And leave their sordid spoils, and high in ether sail."

BARBAULD.

TO OUR READERS AND THE PUBLIC.

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SUPPLEMENT TO PINNOCK'S
No. LXVII. GUIDE TO KNOWLEDGE.

ONE PENNY

ASTRONOMY

PLATE

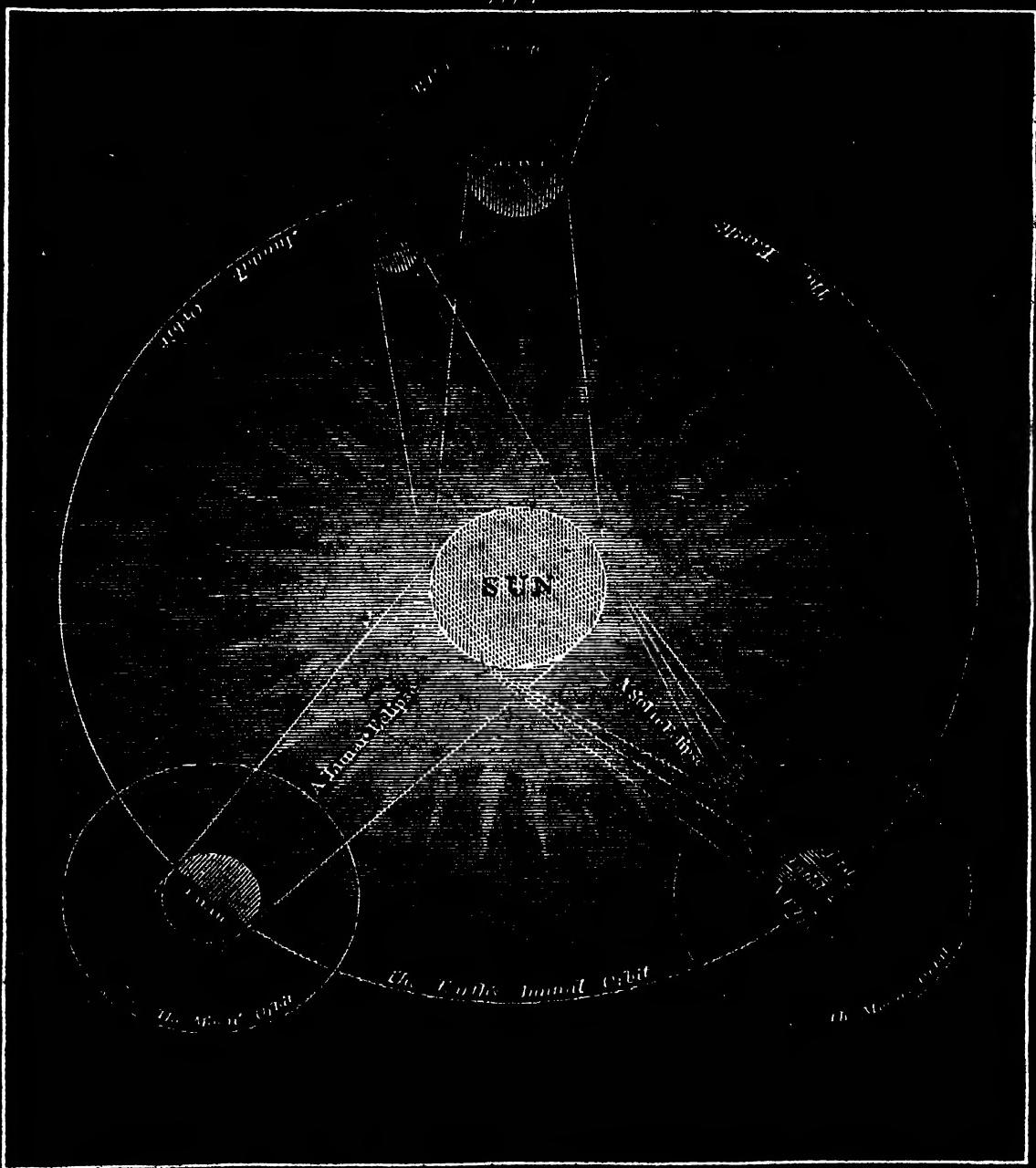


FIG.

FIG.

FIG.

© P. D. 1900



ON ECLIPSES.

TO URANIA.

Oh, come, celestial Muse, my soul inspire,
Joyous to sing of Heaven's blue vault above;—
Oh, teach me so to tune my holy lyre,
That I may fill with grateful praise and love
Frail erring Man,—who, doomed to wander here,
Finds life a burden in each hemisphere!

Come, tell me where the gliding Planets rove,
As each returning when its course is run,
Declare the motion of the Orbs above—
The Cause of th' ECLIPSE OF MOON AND SUN—
How in their orbits Earth and Luna appear;
And whence the TIDES and SEASONS of the year.

How by the EFFECT the SECOND cause is seen;
And how by that—the FIRST GREAT CAUSE is known;
While TRUTH, dispelling Superstition's dream,
The Seeds of Knowledge in the mind are sown—
Increasing as they grow until they lead
To WISDOM; Virtue's noblest—proudest meed.

W. M.

AMONG all the extraordinary phenomena which nature displays in the motions of the heavenly bodies, none are more interestingly sublime or useful than ECLIPSES. While viewing the movement of our sister satellite, the moon, as round our planet she revolves in silent majesty, we have an opportunity of observing "the order of heaven's first law," and of witnessing that order so exemplified before our eyes in the "grand planetarium of nature," that it would be the basest ingratitude in us to neglect it. Yet how many thousands of individuals are there who do not know, and perhaps have not the means of being informed of the cause of these phenomena. To such our pages are addressed, and should our humble endeavours to lift the veil of superstition from their eyes, waken a spirit of inquiry into "cause and effect," and a desire to trace "Nature up to Nature's God," we shall be amply compensated. They will no more feel superstitious fears during an eclipse, no more close up their wells for fear the water should be injured by the supposed noxious influence of some demoniac power; but inquiring will know, and seeing will believe. We however trust that in this enlightened and scientific age there are few who are so far under the influence of error.

ECLIPSES, then, are perfectly natural, that is, there is no deviation from the general course of nature, and are to be calculated upon with as much certainty as when striking a flint with a piece of iron, we expect and see a spark of fire; but they are not the less wonderful; for though in each we see the second cause and the effect, (in the eclipse of the sun, the intervention of the moon between the sun and the earth, and consequent eclipse; and in the striking of the flint, the spark,—produced by the friction melting an atom of the iron into liquid fire,)—still we do not see, but are left to wonder and admire, the First Cause; and, to a philosophic eye, the fire from the flint is as wonderful as the eclipse.

ECLIPSES are occasioned by one heavenly body intervening between the sun or source of light, and another heavenly body; and, as regards our earth, are either solar or lunar eclipses. It is said to be a *solar eclipse* when the sun is eclipsed; and a *lunar eclipse* when the moon is eclipsed. For the sun to be eclipsed, the moon must be between the earth and sun, in a direct line, or within 17

degrees of the nodes or points, where the moon in her course crosses the orbit of the earth. And for the moon to be eclipsed, the earth must be between her and the sun, in a direct line, or she must be within 12 degrees of her nodes. In order to explain this more fully to our readers, we have presented them with a diagram of eclipses, shewing the relative positions of the sun, earth, and moon, during a total or partial eclipse of the sun, and also during an eclipse of the moon, which we shall endeavour to describe.

Fig. 1, represents the earth in her orbit, and revolving on her axis, with the sun shining full upon half of her globe—as shown by the part shaded light—and casting a shadow and penumbra behind her. The moon is also in her orbit, with the sun shining full upon her surface. She is represented to be so far above the nodes, or points where her orbit intersects the orbit of the earth, that she does not prevent the sun's rays from falling upon the earth, but casts her shadow and penumbra quite in another direction; and only a portion of her disk appears illuminated.

Fig. 2, represents an *eclipse of the moon*, occasioned by the earth coming in a direct line between the sun and moon, thereby preventing the sun shining upon her; the earth casting a large umbra and penumbra behind it, in which the moon is enclosed, and consequently appears dark when viewed from the earth.

Fig. 3, represents what is generally termed an *eclipse of the sun*, but what is in fact an *eclipse of the earth*; and, in order to explain this more correctly, we are supposed to be observing the same from a point on the earth marked "total;" the sun shining upon that part of the surface of the moon which is towards him: but the moon being in a direct line between the sun and the point marked "total" on the earth, intersects the sun's rays (as represented by the lines passing to the sun), and prevents them falling on that part of the earth: consequently, an observer standing there cannot see the sun; and the sun is, as regards that part of the earth, totally eclipsed.

An observer standing on that part of the earth represented by the point marked "partial," would only see a *partial eclipse*; the moon not being in a direct line between that part and the sun, but merely preventing a portion of his rays from falling upon the earth, the ob-

server would be prevented from seeing that portion of the sun obscured by the moon, as represented by the two lines drawn from the point "partial" to the sun; and consequently, it would be only a *partial eclipse*.

If the observer be supposed to be standing upon that part of the earth marked "*no eclipse*," and the moon remaining in the same position, he would see no eclipse, (although on the other parts of the earth marked, "*total*" and "*partial*," the eclipse would be total and partial,) because the moon neither intersects the sun's rays, nor the observer's points of sight, as also shewn by the lines running to the sun. Consequently the sun shines upon that part of the earth, the observer sees the whole of the sun, and there is *no eclipse*.

If the line of the nodes, like the axis of the earth, was carried parallel to itself round the sun, there would be just half a year between the conjunction of the sun and nodes; but the nodes shift backwards, or contrary to the earth's annual motion, $19\frac{1}{2}$ of a degree every year, and therefore the same node comes round the sun nineteen days sooner every year than before. Consequently from the time the ascending node passes by the sun, as seen from the earth, it is only 173 days till the descending node passes by him again; so that we may be sure that whenever we have an *eclipse* above either node, we shall have *another eclipse* in 173 days.

By means of eclipses, the most common observer may be convinced of some very important facts. By the eclipses of the moon and sun we know that the moon passes round our earth; that from the time she is passing through the shadow of our earth she must be much smaller than our globe, and that her light is not her own, but borrowed from the sun; for were it not so, she would *continue to shine when passing through the earth's shadow*, nor would she appear dark when between us and the sun; but we find, in proportion as she proceeds away from within 17 degrees of the nodes, she keeps increasing till her full.

Eclipses happen very frequently to the satellites of Jupiter, and are of great service in calculating the longitude of places on the earth. They also prove the motion of light *not to be instantaneous*, for when the earth is between the Sun and Jupiter the *eclipse* of his satellites is found to be 8 minutes sooner than at other times; hence it takes $16\frac{1}{2}$ minutes of time to go through a space equal to the diameter of the earth's orbit, 180 millions of miles in length, and consequently the particles of light fly almost 200,000 miles every second of time.

We have various accounts of ancient astronomical observations and eclipses, many of which however may be considered as fabulous, and not to be depended upon: as little can be ascertained of the actual state and position of our earth with respect to the heavenly bodies previous to the Flood but by tradition and conjecture, which are generally erroneous. The Indian epoch of astronomy is said to be an *eclipse*, which took place so long as 3,102 years before the Christian era: and Mr. Bailly, after considerable research and calculation, states, that a conjunction of the sun and moon did actually take place at that time. He also informs us, that the Indians at present calculate eclipses by the mean motion of the sun and moon, observed 5000 years since.

To the Emperor *Hong-ti*, the grandson of Noah, the Chinese attribute the discovery of the Pole Star, and the invention of the mariner's compass. *Du Halde* affirms, 96 eclipses are recorded by *Confucius*, who lived 551 years before Christ; and *P. Trigault*, who went to China

in 1619, and read more than 100 volumes of their Annals, states, "It is certain that the Chinese began to make astronomical observations soon after the Flood; that they have observed a great number of eclipses, in which they have noted down the hour, day, month, and year when they happened, but neither the duration nor the quantity; and that these eclipses have been made use of for regulating their chronology."

We are also informed by *Du Halde*, that in the province of *Honan*, and *City Teng-foan*, which is nearly in the middle of China, there is a tower, on the top of which it is said that *Tchao-cong*, the most skilful astronomer that ever China produced, made his observations. He lived 1,200 years before *Ptolemy*, or more than 1000 years before Christ, and passed whole nights in observing the celestial bodies, and arranging them into constellations. He had a very large brass table placed perfectly horizontal, on which was fixed a long upright plate of the same metal, both of which were divided into degrees, and by these he marked the meridian altitudes; and from them derived the times of the solstices, which were their principal epochs. The Abbé *Grosier*, in his description of China, states, that in *Peking*, there is an astronomical tribunal established, having an inspector, two presidents, one of them a Tartar, the other a Chinese, and a certain number of Mandarins, who act as assessors; but for more than a century, the president has been an European, and two-thirds of the pupils are maintained at the Emperor's expense. The following *ceremony* takes place during *eclipses*:—A communication is made some months beforehand to the Emperor, of the day and hour, as well as the direction in which it will appear. The *eclipse* is also calculated for the longitude or latitude of the capital city of every province in the celestial empire. These observations, and the diagram of the *eclipse*, are preserved by the tribunal of ceremonies, and another, called the *Calao*, by whom it is transmitted to the different provinces and cities of the empire. A few days before the *eclipse*, the tribunal causes to be fixed up on a public place in large characters, the hour and minute when the *eclipse* will commence; the quarter of the heavens in which it will be visible, with other particulars. The Mandarins are next summoned to appear in state at the Tribunal of Astronomy, and to wait there till the *eclipse* will take place; and as soon as that begins, they throw themselves on their knees, knock their heads against the earth, and make a dreadful noise with drums and cymbals throughout the city: this ceremony is performed, with the superstitious idea of preventing the sun from being devoured by the celestial dragon. And, although the superstition is exploded, they still keep up the custom. While the Mandarins are prostrate in the court, others on the observatory examine with great attention the commencement, middle, and ending of the *eclipse*, comparing what they observe with the figure and calculation given. They then write down their observations, seal them, and transmit them to the Emperor, who meantime has also been observing the *eclipse*. This ceremony takes place throughout the whole empire.

With the exception of the superstitious ceremonies of the Mandarins, we endeavoured, in our last number, to adopt the custom of the "*Calao*" and the good people of *Peking*, by diffusing throughout his majesty's dominions the hour, minute, and second of the late solar *eclipse* beforehand, but which we are happy to say did not produce a "dreadful noise of cymbals and drums throughout the city," nor any bodily injury or ill-effect upon his majesty's liege subjects.

W. M.



THE CHAMELEON.

THE Chameleon is an animal of the lizard species, about which so many stories have been told, and so much curiosity excited, that no apology needs to be offered for the description here given. It is a native of various countries, particularly in the warm climates; and many of them are found about Smyrna, and other parts of Turkey. Its head is larger than the common lizard; and its back is shaped very similar to that of a pig. It has four feet, which are divided into claws resembling those of a parrot; and it has a long flattish tail, of which it makes great use in climbing, for thereby it will hang to the branches of a tree, as well as by its feet, and draw up its body to a resting place. Its tongue is three or four inches long, of a whitish grisly substance, round as far as the tip, which is hollow, and shaped like the end of a pestle, somewhat like the proboscis of an elephant. The tongue is contained in a sort of sheath, joined to the throat, from which the animal can dart it with extraordinary quickness upon flies that come in its way, or other small insects, on which it undoubtedly feeds, and not on the air, as some fictitious romances have stated. In order to retain those flies, the tongue of the Chameleon is supplied from its throat with a viscous or glutinous matter, which exudes from the tip, and secures the victim, which it then draws into its mouth. However, these animals can live a long time without taking any visible sustenance, and from this circumstance has probably risen the error of supposing that they live on the air alone: the fact is, that the lungs of the Chameleon, reaching almost the whole length of its body, are so formed that it can draw in so much air as from a thin and lank appearance to seem full and gross. Its lungs are divided into two lobes, placed on each side of its body: they are of a thin membranous substance, full of small veins, and therefore capable of expansion by a quantity of air; but being let out, they shrink, become flaccid, and the animal again appears lean and cadaverous.

The head is immovable, except as it turns with the body; but to recompense for that defect, it possesses fine eyes, about the size of a pea, which it can move in a peculiar manner, with different motions, the one backward, the other forward; one upwards, the other downwards; or fix one of them on any object, while the other moves in pursuit of some other: so that its eyes are quite independent of each other, and capable of all the evolutions that can be imagined. The eye is formed with concentric circles, one within another, the innermost having an aperture about as large as the head of a pin, through which the light enters, and effects the power of vision. The animal does not appear to have any ears, but it has two small openings in the head, which serve for nostrils.

The most astonishing quality of the Chameleon is the faculty of changing its colour, and assuming those of the objects near which it is placed. The usual colour of those observed about Smyrna is green, darker on the back, and lighter beneath, inclining to yellow, with spots sometimes reddish, sometimes whitish. There are many of them to be seen among stones, and on the earth, of a greyish colour, like the stones and moss among which they breed; but on being handled, or removed to other places, they have not always appeared to take the colour of that upon which they have been placed; and naturalists differ in their opinions, as to the reason or manner of the Chameleon's changing its colours. Some maintain it is done by suffusion, others by reflection; and some think it is by the different disposition of the skin, which gives a modification to the rays of light.

An ingenious traveller, who tried several experiments on this animal, after relating their effects, says, "This we constantly experienced, that being placed upon green, the animal became of the same colour; and being removed and put upon dark earth, it would assume that colour also. And what is equally surprising, in one hour it

seemed to be a mere skin, and the next hour it would appear fat, plump, and fleshy." Nature, we see, has given to all animals the powers and organs necessary to procure subsistence; and this change of colour may tend to deceive such insects as constitute its food, and which would not settle near enough to be caught, if they were not deceived by mistaking it for a part of the substance on which they were accustomed to alight; for it seems to have no means of catching them until they come within reach of its tongue.

HINTS TO STUDENTS.

ON THE CONSTRUCTION OF SENTENCES.

THE proper construction of sentences is of very great importance in composition. However interesting the subject of a work may be, the work will fail to please us, in which the periods are so constructed; as, *firstly*, to leave us doubtful of their meaning; *secondly*, to distract our judgment by including in one period, what should be the subject of two or more periods; *thirdly*, to weary us by their febleness; and, *fourthly*, to disgust us by monotony or by harshness.

We have been thus particular in pointing out the above faults, not because they are the *only* faults of which a writer may be guilty, but because they are the chief, and because they are the most usual faults of young writers.

Ambiguity arises from two causes; a wrong choice of words, or a bad arrangement of them in sentences. Of the wrong choice of individual words we have already spoken. We have now to impress upon our young readers, that a sentence may be very ambiguous in its meaning, although each word of a sentence be correctly chosen. To avoid ambiguity, we must not only use *proper words*, but we must also use them in their *proper places*. Thus, the individual words of the following sentence from one of Bishop Sherlock's Sermons are well chosen, yet the misplacing of one word renders the sentence ambiguous, if not nonsensical:—

"It is folly to pretend to arm ourselves against the accidents of life, by heaping up treasures, which nothing can protect us against but the good providence of our heavenly Father."—"Which," as the above sentence is arranged, refers to the substantive "*treasures*," which immediately precedes it; and thus we are told, that against *treasures* nothing can protect us but the good providence of our heavenly Father. But this was not the bishop's meaning; and the merely changing the situation of four words renders his real meaning as grammatically apparent as it is morally excellent. The sentence should stand thus:—

"It is folly to pretend, by heaping up treasures, to arm ourselves against the accidents of life, which nothing can protect us against but the good providence of our heavenly Father."

The next important point in the construction of sentences, is **UNITY**; and this point is not merely important but indispensable to a good style. A sentence should express one proposition; and though the sentence may consist of many members, they should be so intimately connected as to impress the mind with one object. Long sentences are at once the delight and the bane of young writers; who, lest they should be censured for the extreme use of short sentences, run into the opposite extreme, and crowd into one period things which have so little connexion, that they might fairly be made the subject

of many periods. This error is so annoying to a reader, that it is far more safe for a writer to venture upon the opposite extreme, of breaking his discourse into many short sentences. In order to preserve the unity of a sentence, it is necessary to avoid the unnecessary use of parentheses. These are sometimes necessary to the sense, and an ornament to the composition, but, generally speaking, their effect is bad.

We shall only name one more requisite to the unity of sentences:—it should always be brought to a full and perfect close. By this we mean, not only that the proposition properly forming the subject of the sentence should be completed, for without that completion there is, in fact, grammatically speaking, no sentence at all; but also that, after that proposition is finished, another proposition shall not be commenced. It frequently occurs, that when we come to the word which ends the legitimate sentence, some other circumstance arises which ought to have been made the subject of another sentence. Whenever this occurs the sentence is faulty, and may in fact be said to be more than finished.

MIRROR OF THE MONTH.

This month the ROMANS named *Sextilis*, from its being the *sixth* in their calendar, before the change was made by King Numa. It however retained its original name, until *Augustus Cesar* gave it his surname, because in it he first became *consul*, celebrated three triumphs, and ended the civil wars. Since Numa's time, August has continued the eighth month in the year.

The SAXONS called it *Arn-monat*, (or *Barn-monat*,) because they filled their barns with corn. The Saxon word *Arn* signifies *harvest*. They also called it (as well as *Juno*), *Woad-monath*.

August was dedicated by the Romans to *Ceres*, the goddess of corn and harvest; and its first *kalend*, or first day, was sacred to *Mars*, the god of war. No festival of particular note was celebrated by them in this month. The first of August is denominated in the Christian calendar, "*LAMMAS-DAY*"; a name which has been variously accounted for, but which is most probably derived from an old Saxon term, signifying *Loaf-Mass*, as on this day it was customary for the Saxons to offer an oblation of loaves, made of new wheat, as the fruits of their corn. They also gave alms of bread on *Loaf-Lammas*, or *Lammas-day*.

The glorious *Transfiguration* of our blessed Saviour on the Mount, recorded in the Gospels, was celebrated by the primitive Christians on the 6th day of this month; and the name of the festival is yet retained in our calendar.

On the 12th, the late King *George IV.* was born, in 1762. He ascended the throne on the 29th of January, 1820, and died on the 24th of June, 1830, aged 69.

The beheading of St. John the Baptist is commemorated on the 29th of August. His nativity is celebrated on the 24th of June.

This is the long desired and welcome month of *harvest*. The heat of the solar rays now ripens all kinds of grain; and on this account fine steady weather is earnestly desired by the farmer in August. If the season be propitious, his hopes and his industry are now crowned with

the heavenly blessing, and the rich store of sustenance for the coming year is joyously housed in his garners. The first crops are generally rye and oats, and the last peas and beans. Harvest time varies considerably in different districts, according to the situation of the corn lands. It principally commences in the beginning of this month, but in the southern and midland parts of our island, it is often begun in July, while the north countrymen can do nothing of consequence in it until the first and second week in September. The method of getting in the corn varies as much as the periods of its commencement. Some reap it with a sickle, and bind it in sheaves; others cut it in a peculiar manner with a scythe, and either leave it without binding up, or at most make it into a sort of bundles. Some farmers use a sickle toothed like a saw; others employ a smooth and keen-edged sickle. In some counties the grain is cut off not far from the ear, so as to leave a long stubble, while in others it is reaped close to the ground.

Our ancestors greatly honoured this month of produce. They mingled merry-making with labour, and rendered the time of harvest a period of universal gladness. They crowned the wheat-sheaves with flowers, invited each other to feast at the housing of the corn, when they danced, and shouted, and sung with true glee; and, that none might be sorrowful at such a joyous time, they made presents to all who had assisted in getting in the crops. This rural festival was called "*Harvest-Home*."^{*} It is still the greatest rural holiday in England, because it terminates the most toilsome yet profitable employment of the farmer, and unites repose and profit for the remainder of the year. But modern refinements have unfortunately stripped the merriments of harvest-home of that unrestrained and warm-hearted enjoyment which formerly distinguished them. The master seldom nowmingles with freedom and rejoicing in the delights of the harvestmen, but thinks it sufficient if he provides a plentiful feast, and allows them to enjoy themselves in their own way. This change has altered the character of this festival; for the cheering smile of sympathy, and the non-distinction of rank or station in these rustic festivities, were the chief source of gladness to the honest and humble husbandman.

Formerly, many curious ceremonies were observed by rustics at "*harvest-home*." They carried images made of straw, or stubble, from the harvest field, round which the men and women danced and sang to the lively notes of a piper, who followed it. In the north, such a figure was called the "*Kern-Baby*." In the isles of the Hebrides, all the reapers join in chanting a harvest song, while they regulate the strokes of their sickles to its notes; thus making the very act of gathering the harvest a festive employment.

Nothing can be more beautiful to the eye than an open corn country, when the waving grain slowly falls before the path of the reaper, and the firmly gathered sheaves stand ready for removal, and the richly laden waggon slowly receives the collected stores, and the happy industrious gleaners follow its track, to gather the little scatterings which custom has for ages allowed them. It is a season of general joy, and cannot fail to raise an exalted feeling of gratitude to the bountiful Supreme, in the breast of a beholder.

And now, also,—

"The garden blooms with vegetable gold,
And all POMONA* in the orchard glows;
Her racy fruits now glory in the sun;
The wall-enamour'd flower in saffron blows;
Gay annuals their spicy sweets unfold;
To cooling brooks the panting cattle run."

Fruit is now exceedingly plentiful, especially pears, peaches, apricots, and grapes. We have also still additional garden flowers, such as amaranths and African marigolds; and the beautiful passion flower, the trumpet flower, and the virgin's bower, add their elegant ornaments to our floral enjoyments.

Hops now yield their valuable produce, particularly in Hants, Surrey, and Kent. The hop is a most useful plant; in its wild state it is relished by cows, horses, sheep, goats, and swine. When cultivated, its young tops are frequently eaten early in the spring as substitutes for asparagus, being wholesome and aperient. Its principal use, however, is in brewing malt liquors, to which it imparts a bitter flavour, and is also the means of their preservation. Hops also serve important purposes in medicine.

The common glow-worm may now be seen in abundance; which, like the cricket, lady-bird, and many other insects, makes but little use of its wings, for they are seldom seen on any situation more elevated than the summit of a barley-ear, or a stunted furze-bush, but are generally found on banks under hedges, and sometimes in the interstices of rugged elm-roots and the foundations of buildings. The luminous appearance of the *glow-worm* has caused it to attract the notice of most of our rural poets, and all of them, except Thomson, have considered it as a crawling reptile, an inhabitant of the herbage. In the fable of the "*Nightingale and Glow-worm*," the author makes the songster, previously to devouring the boasting insect, address it thus:

"Deluded fool, with pride elate,
Know'st thy beauty brings thy fate:
Less dazzling, long thou mightst have lain
Unweeded on the velvet plain;
But, 'on or late, degraded mourns,
A fly wrecks whom she adorns."

That beautiful little insect, the *lady-bird*, or *lady-com*, now seen, and so often charged with being the cause of blights in apple trees, is, in reality, the best remedy against that disease. The lady-bird, both when perfect and in its larva state, feeds upon the *aphis*, a genus of which the blight in question is a species. Many of the lady-birds may be seen in the cankered spots of apple-trees; not, indeed, sucking their nutritious juices, but devouring the real enemy of the future hopes of the orchard. The utility of this insect, in destroying the blight, is well known in the hop countries, and it was probably some ancient observation on their mode of life that first gave rise to a preposition in their favour, whence our infant lips were taught to sing—

"Lady-bird, lady-bird, fly away home,
Your house is on fire, your children will burn;"

and so let them escape. This remark, we trust, will, founded on experience, be sufficient to prevent our readers from setting about the destruction of these friendly insects,

to spend their whole life in devouring that bane of vegetation, the *aphis*, or blight. How easily are we led, by imperfect observation, to make mistakes that are not only fatal to the harmless creatures that fall under our

* An account of which, with a descriptive engraving is given at page 81.

POMONA, a nymph who was supposed to preside over gardens be the goddess of all sorts of fruit-trees.

misplaced suspicion, but are eventually most injurious to ourselves.

The woods and commons are covered with purple and yellow beauty,—insects swarm, flies abound, vegetables are plentiful, young broods of goldfinches appear, lapwings and starlings congregate, puffins migrate in swarms, the swift disappears, rooks roost in their nest-trees, thistle-down floats, birds resume their spring songs, and at the end of the month the first symptom of Autumn appears,—for the beech-tree then turns yellow.

The daily use of the cold-bath in this month is one of the best preservations of health, and a means of invigorating the constitution against the evils of the approaching winter. To many, however, the plunging-bath is injurious, by the absence of that reaction which causes the glow on the skin of those who receive benefit from bathing. In such cases the shower-bath should be used; but when no reaction follows the use even of that, the individual should sponge the body with cold salt-water, or vinegar and water, before rising in the morning, while the body is kept warm in bed.

SCYLLA AND CHARYBDIS.

THE poetical genius of Homer has given a degree of importance to the rocks of Scylla, and the whirlpool of Charybdis, which they do not in reality merit; yet no doubt they were, in the infancy of navigation, when the barks were small and frail, and the mariners unskillful, formidable and dangerous obstacles to the passage of the strait of Messina.

Scylla, said in the heathen mythology to have been a beautiful nymph, transformed into a sea monster by the jealousy of Circe, is in reality merely a common rock, on the coast of Italy, and opposite that of Sicily. In its summit is a castle, and on each side a sandy bay. In 1793 an earthquake is said to have destroyed some of the surrounding rocks, and thus lessened the danger, and prevented that extraordinary roaring of the sea in stormy weather, which was said to have resembled the barking of dogs, but is not now observed. Charybdis is a vortex, or whirlpool, on the coast of Sicily, opposite to Scylla, and now denominated Galofaro. It is by no means so formidable as represented by the ancients, yet certainly presents a danger not to be despised. It is probably caused from the meeting of several currents, and is sometimes so powerful as to whirl round a man of war, and to place the undocked boats of the country in considerable peril.

AN EXPLANATION OF THE PRINCIPAL TERMS MADE USE OF IN ASTRONOMY.

Era, a series of years, commencing from a certain fixed point of time, called an *Epoch*. Thus the *Christian Era* is the number of years since the birth of Christ.

Obs.—Authors, however, generally use the terms *Era* and *Epoch* synonymously for the time from which the computation commences.

Altitude, signifies the height of the sun, moon, or stars, above the horizon, reckoned upon a vertical circle, in degrees, minutes, &c.; in other words, it is the arch of a vertical circle intercepted between the stars and the horizon; also the elevation of any of the heavenly bodies above the horizon.

Amphison, a name given to the inhabitants of the torrid zone, on account of their shadows falling at one time of the year towards the north, and at another time towards the south.

Amplitude is an arc of the horizon contained between the east

or west point of the heavens and the centre of the sun, star, or planet, at the time of its rising or setting.

Anale, the inclination of the ecliptic to the horizon at any point.

Anticls, a name given to those inhabitants of the earth who live under the same meridian, and at equal distances from the equator, but on opposite sides of it.

Antipodes, those inhabitants who live on contrary sides of the globe, with their feet directly opposite to ours, being those who walk feet to feet.

Aphelion is that point in the orbit of a planet in which it is at its greatest distance from the sun.

Aquarius, a sign of the zodiac, containing ninety-three stars.

Armillary Sphere, is an instrument composed of the principal circles which are usually drawn upon an artificial globe.

Aries, the *Ram*, a sign of the zodiac, comprising forty-six stars, into which the sun enters about the 20th of March, or the beginning of the spring quarter.

Asci, the inhabitants of the torrid zone, so called, because the sun being twice a year in their zenith, their bodies at those times cast no shadow.

Atmosphere is that collection of vapours, or body of air, which surrounds or encompasses the earth.

Attraction is that property of matter by which bodies are made to approach towards each other, without any sensible agent either drawing or impelling them: It may be divided into the attraction of gravity and the attraction of cohesion.

Attraction of Gravity is that by which all bodies tend towards the centre, or act on each other at a distance; from hence proceed almost all the motions and changes in the system. It is by this principle that light bodies ascend, that projectiles are regulated in their courses, the vapours ascend, and the rain falls, the waves roll, the air presses, and the sea is swelled or decreased by the vicissitudes of its flux and reflux.

The Attraction of Cohesion is that which unites the insensible particles of bodies together into their different masses, and causes the roundness we see in drops of water or quicksilver.

Aurora, the morning twilight, which begins to appear when the sun is about eighteen degrees below the horizon.

Aurora Borealis is an extraordinary meteor, or luminous appearance, shewing itself in the night in the northern parts of the heavens. Various reasons have been given by philosophers for this phenomenon; but as no two of them agree, and perhaps are all mistaken as to the real cause, we shall not trouble the reader with their conjectures. It is very common in countries near the pole, but rarely in England, none being recorded in our annals, from Nov. 14, 1574, till the surprising one of March 6, 1716, since which time, however, they have been more frequent.

Azimuths are great circles which pass through the zenith and nadir, and are perpendicular to the horizon. The azimuth of any celestial object is an arc of the horizon contained between the east or west point of the heavens, and a vertical circle passing through the centre of that object.

(To be continued.)

13 We have to return our acknowledgments to the many respectable Journals, which have both pleased to notice the usefulness of our humble Publication, and the correctness of the delineation and description of the Solar Eclipse of the 17th inst. given beforehand in our last Number. We can only say, that no expense or trouble will be spared in the future Numbers to render them worthy of our Readers, by selecting from Science, Literature, and the Arts, such subjects as will at the same time be useful and entertaining.

* * * The BACK NUMBERS of this Work may now be had.

No. LXVIII.] **GUIDE TO KNOWLEDGE.**

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PORTUGAL.

~~Portugal~~ was originally a province of Spain, and has undergone the same revolutions with it. It may be considered as Spain in miniature, being in situation, soil, and climate, nearly similar. Like Spain, it flourished, and was wealthy, in consequence of its possessions abroad; and like Spain, it has sunk from the importance it once enjoyed.

This country was originally called *Lusitania*, but its boundaries were then different from what they are now. The name of *Portugal* is by some thought to signify *Portus Gallicus*, or *Portus Gallorum*, on account of the multitude of French which came to the city of *Porto*, on the river *Douro*, in order to assist the *Cavastans* against the *Mozabars*. But others, with more probability, derive it from a town on the river *Douro*, by the ancient name of *Cale*, but by the moderns changed to *Oporto*. Opposite to this place some of the inhabitants afterwards built a new town with a harbour, and gave it the name of *Poitecada*, or the harbour, or *Port of Cale*, which, by an uninterrupted prosperity, proved the origin of the present flourishing city of *Porto*, or *Oporto*, and from hence the whole country has received the name of *Portugal*. The old name of *Lusitania* was abolished, and the new one took place under Ferdinand the Great, king of Castile and Leon, who gave this country and Galicia to his son *Garcia*. The most ancient writing now extant, in which the name of Portugal is used for the whole kingdom, is dated in the year 1069, and kept in a convent at *Arouca*. This kingdom, which is the most western part of Europe, is bounded on the south and west by the Atlantic Ocean, and on the north and east by Spain.

The climate of Portugal is much more temperate than in Spain, though with some little difference in the several provinces.

Though the soil in general be very fruitful, so much is agriculture neglected, that above half the country lies waste, and the inhabitants are supplied with a great part of their corn by importation.

The chief products of Portugal are wine, olives, lemons, almonds, figs, raisins, and honey, all of which are found here in abundance.

The country in various parts is very mountainous. The chief mountains are *Tra-los-Montes*, and the mountains of *Estrella*, which run through *Beira* and *Extremadura*.

The chief rivers of Portugal are the *Tagus*, *Douro* and *Guadiana*; those of less note are the *Minho*, *Mondego*, *Carado*, and *Lima*, or *Bela*.

The *Tagus* has its source on the frontiers of Arragon and Old Castile, in Spain, and upon its entering Portugal it is joined by the swift river of *Zereie* and others. It flows by *Aranyuez*, *Toledo* and *Talavera*, crosses *Extremadura* by *Alcantara*, into Portugal where it flows by *Ibrantes*, *Santarem*, and *Lisbon*, where it forms one of the finest harbours in the world, a little below which it falls into the Atlantic Ocean. This is by far the largest river in the kingdom.

The *Douro* has its source in the mountains on the

* For a more extended view of the environs of Oporto than is given in the plate above the reader is referred to the map of Portugal in page 225, No. XXIX. Before this country was invaded by the French, in 1807, it contained about 1,000,000 inhabitants, but since that period, and the founding of the kingdom of empire of Brazil, great numbers have emigrated to that country.—*Pincock's Modern Geography*.

eastern borders of Old Castile, in Spain, and hence flows through the province of Leon, to the north-east point of Portugal, where, turning westward, and having separated Leon from the *Tras-os-Montes*, it again takes a western course through Portugal. Its chief course is among mountains, and after receiving the lesser rivers of the *Sado*, *Sabor*, *Tua*, *Tamega*, *Duero*, and *Tejo*, all falls into the *Tagus* near Oporto. The first town where this river becomes navigable is at *Sao Joao de Beira*.

The *Guadiana* rises in New Castile, in Spain, flows by *Castroverde*, *Mertola*, and *Redondo*, into Portugal, where it takes a south direction, separating *Algarve* from *Andalusia*, falls into the Bay of Cadiz. The *Ribeira*, by the Romans, was called *Anas*; *Guadi*, in the Moorish tongue, signifies a river.

The *Minho* has its source in Galicia, in Spain, and empties itself into the Atlantic Ocean, near the town of *Carmo*. The *Lam* or *Bela*, also takes its source in Galicia, and falls into the Atlantic a little below *Viana*. This river, by the ancients, was called *Letha*, or the river of *Forgetfulness*, from the *Terceira* and *Celta*, after losing their commander in chief, settling there, as if they had forgotten their native country. The *Mondego* rises in the mountains of *Beira*, and falls into the Atlantic at *Barcas*. The banks of this river were the scenes of many great military movements between the British and French, in September 1810, and in March 1811.

The nobility here are very numerous, though formerly they were much more so than at present. They are divided into high and low. The high, or titled nobility, consist of dukes, marquesses, viscounts, and barons. All those who are grandees, and styled *Dous*, like those of Spain, consist of three classes, and receive from the royal treasury a pension sufficient to support their respective dignities. The inferior nobility or gentry are termed *Fidalgos*, and are incapable of bearing the title of *Dou*, unless by permission from the king.

Portugal was first erected into a kingdom in 1139 and the most flourishing period of her monarchy was during the 15th century, and the first half of the 16th. During this period the Portuguese were distinguished for success in maritime discovery and navigation,—departments of enterprise in which they were, for a long time, un rivalled among any other nation. Among the chief of the Portuguese navigators, were *Diaz*, *Vasco de Gama*, and *Magellan*. *Diaz* discovered the Cape of Good Hope, *De Gama* was the first who sailed round it, (to India) and *Magellan* commanded the fleet, which for the first time, completed the circumnavigation of the globe.

PORTUGAL is divided into six provinces, namely,
ENTRE DOURO-E-MINHO, and **TRA-LOS-MONTES** in the north
BEIRA and **ESTREMADURA** in the middle
ALENTEJO and **ALGARVA** in the south

I. FUTURE DOURO-E-MINHO

Entre Douro-e-Minho is situated on the sea coast, between the rivers *Douro* and *Minho* hence its name. It is bounded on the east by *Tra-los-Montes*, and on the north by Galicia, in Spain. Its surface is very mountainous, the highest grounds are for the most part, barren, but the valleys are rich, and very fertile, and productive in wine, oil, fruit, and flax. The richest part of the province is adjacent to the *Douro*, which produce vast quantities of wine, called *Port*. It is very populous, and is chiefly distinguished for its well conducted agriculture. Its capital is *Braga*.

Chief Towns	Rivers
OPORTO	Douro.
BRAGA	Cavado.
VIANA	Lima.
VILA NOVA DE AMPE	Ave.

Oporto, or Porto, is a celebrated city and sea-port, on the river Douro, which, a little below, falls into the sea. There is an excellent harbour, but the bar at its entrance renders the navigation into it somewhat dangerous, which arises on account of a sand bank and ague rocks running across it. Next to Lisbon, is the most important city in the kingdom. It is large, rich, and populous, and is greatly noted for its extensive commerce, particularly in the wine called Port, of which large quantities are exported to England. Its commerce greatly increased after the earthquake at Lisbon, in the year 1755; before which, the population was estimated at 20,000; and it is now said to exceed 70,000. The city is fortified only by an old wall and towers, and on the side of the river it is defended by the castle of St. John. It formerly was subject to particular lords, but at present belongs to the crown.

Braga, a very considerable city, is seated in a pleasant plain between the rivers Cadava and Dexe. It derives its name from a certain kind of garment used by the ancient inhabitants. It is said to have been built by the Greeks, but afterwards fell under the power of the Carthaginians, Romans, Alans, Swabians, Goths, and Moors; and lastly of the kings of Leon. The Romans gave it the title of Augusta, and the Swabians honoured it with their residence. This city is the see of an archbishop, the primate of Portugal. It contains several churches, besides the cathedral, and eight convents; besides twenty-seven other churches in its district. There are some remains of antiquity, particularly of an amphitheatre and an aqueduct. The archbishop's revenue is said to be about 6,000*l* sterling a-year. Braga is 180 miles north from Lisbon.

VILLA NOVA DE PORTO is a small town, seated on the south side of the Douro, opposite to Oporto, and not far from the old town of Gaya, and in respect of which it is called Villa Nova. It was built by king Alphonso, in 1255. It is defended by several forts, and depends entirely on Oporto.

Viana, a very considerable town, is pleasantly situated near the mouth of the river Lima, 40 miles north of Oporto. It is large and well built, and has a very commodious harbour, together with an extensive commerce. It has several courts of justice, churches, convents, and a spacious magazine.

Villa de Conde, a pretty good sea-port, is seated at the mouth of the Ave, 20 miles north of Oporto.

Caminha is a small fortified town, on the river Minho, near its influx into the sea, where it forms a small island, on which are a fort and convent. It contains about 1,000 inhabitants.

Barcelos is a small town, on the river Cavado. It is well fortified with walls and towers. This place is the most ancient earldom in the kingdom, but the title is at present extinct.

Vanhenga is a small but strong town on the river Minho. It is seated on an eminence opposite to the Spanish fortress of Tuy, from which it is distant a little more than a cannon shot. It is 30 miles north of Braga.

II TRA LOS-MONTES.

TRA-LOS-MONTES is a considerable province beyond the mountains, and is separated from Entre Douro-e-Minho by

the mountain Marao. This province is very mountainous, — hence its name. It is, for the most part barren, and thinly inhabited. The valleys, however, are fertile, which abound in fruit, oil, and cattle; first the principal article of commerce is Rose wine. It is bounded on the north by Galicia, on the east by Leon, and on the south by Beira.

Chief Towns	Rivers
MIRANDA	Douro.
BRAGANZA	Ferreira.
VILLA REAL	Corgo.

BRAGANZA is a small city near the river Ferreira. It is situated at the extremity of the province of Tras-Montes, near the borders of Leon and Galicia in Spain, about 120 miles north of Lisbon. This town is supposed to have been the ancient Brigantium. The ancestors of the present royal family were dukes of Braganza, before they were advanced to the throne, in the person of JOHN, the eighth duke, and fourth king of that name. It is divided into the Old and the New Town; — the former is seated on an eminence, surrounded by double walls, now in ruins; and the latter is on a plain at the foot of the mountain, defended by a fort. It is 88 miles to the north-east of Oporto.

Cáceres is a considerable town, on the river Tamega. It is 6 miles from the borders of Galicia, and 200 to the north-east from Lisbon. It was built by the emperor Vespasian, in the year 78, and was called *Aqua Flavia*. It is well fortified, and there are yet visible many traces of its ancient size and grandeur. There is still a Roman bridge of stone over the Tamega. It is 26 miles west of Braganza.

Miranda, the capital of the province, is seated on a rock by the river Douro, near the frontier of Spain. It is about 120 miles south from Braganza, and 180 north-east from Lisbon. It is well fortified, and is a bishopric, who has a revenue of about 1400*l*. a year.

Villa Real, or the Royal Town, is the best and largest town in this province. It was called royal, from its having been founded by King Dennis, in the year 1289. It is seated between the river Corgo and Ribira. It is about 150 miles north of Lisbon, and 88 from Braganza.

Torre-de-Moncorva, a pretty good town, is seated in a spacious plain, between the rivers Douro and Sabor. Besides a castle, it is surrounded by a wall and some bastions. Its district contains 11 parishes.

III. BEIRA.

BLIDA, the largest province of Portugal, is bounded on the north by the river Douro; on the south by Estremadura and the Tagus; and on the west by the Atlantic. Its valleys are rich and very fruitful. It is chiefly noted for its excellent wine, and for its numerous plantations of olives. Its capital is Coimbra.

Chief Towns	Rivers
COIMBRA	Mondego.
AVEIRO	Vouga.
VISEU	Mondego & Vouga.
LAMEGO	Douro.
GUARDA	Mondego.

CAIMBRA, a very considerable town, formerly called Celimbra, is seated on the Mondego, over which is a stately stone bridge. It was anciently a famous Roman colony. It is the capital of Beira, and a bishop's see, with a celebrated university. Here are also many churches, convents, and colleges, besides the cathedral and courts of

justice. The bishop's revenue is about 6,000*l.* a-year. The monks of the convent of the Holy Cross here are all noblemen, and are the order of St. Augustine. The university is a very magnificent structure; the professors belonging to it are about 30, and the students about 2000. The cathedral is greatly admired, for its architecture, its ornaments, and its riches. It is about 9*m.* miles on the north-east from Lisbon.

Aveiro is a considerable port, about 23 miles south of Oporto. Its chief trade is in salt, of which great quantities are produced in its vicinity.

Viseu is a small town, situated among mountains. It was founded by the Romans, who called it *Vionentia*. Here are still remaining two ancient Roman towers. It was raised to a duchy by King John I., and its district includes 31 parishes. It is a bishop's see, and is about 50 miles north-east of Coimbra.

Lamego, near the Douro, is situated in a low country, surrounded with mountains. It is a bishop's see; and has a strong citadel, two cathedral churches, and four convents. It is said to have been originally founded by some Greeks from Laconia, and was formerly called *Laconi Murgi*. It was afterwards named *Lamego*; hence its present name Lamego. This city is raised to an eminence, and is celebrated for the assembly of the states to confirm the election of Alfonso Henriques, the first King of Portugal, and for having enacted the fundamental laws, which are now forgotten. It is about 50 miles east of Oporto.

Guarda, situated near the source of the Mondego, besides its castle, is strongly fortified both by nature and art. It is a bishop's see; and, although a small town, it has four churches, and a magnificent cathedral. It includes 40 parishes. It is 138 miles to the north-east of Lisbon.

Almeida is a fortified town, on the river Coa, on the borders of Spain. The French took it in 1810, and abandoned it in 1811, after blowing up the fortress. It is 18 miles north-east of Guarda.

IV. ESTREMADURA.

ESTREMADURA* is divided into two parts by the Tagus, and extends to the northward and southward of that river. Its capital is *Lisbon*. It is bounded on the north by Beira; east and south by ALENTEJO; and on the west by the Atlantic Ocean. It abounds with excellent wine, oil, honey, and oranges. Here the oranges were first planted that were brought from China, and which are known by the name of China oranges. The country between Lisbon and Abrantes has the appearance of one continued garden. The climate here is also very mild and pleasant; the heat being qualified by the breezes from the Western Ocean.

Chief Towns.	Rivers.
LISBON	Tagus.
ST. UBEZ	Zezoum.
SANTAREM	Tagus.
ABRANTES	Tagus.

Lisbon, the metropolis of Portugal, is one of the most considerable ports in Europe. This beautiful city has been repeatedly visited by earthquakes, but by none so terrible as that of 1755, when, with *St. Ubes*, it was almost destroyed by a general conflagration, which succeeded the most tremendous shock ever felt in Europe, not excepting even the overwhelming of the city of

* Estremadura is also the name of a province in Spain, of which Badajoz is the capital.

Herculaneum, by a sudden eruption of Mount Vesuvius, A.D. 79, and the destruction in Calabria, in 1783, which is the nearest resemblance to this disastrous event. (A full account of Lisbon will be given in a separate chapter.)

The other towns of this province are *Beira*, at the conflux of the *Ete* and *Bon*; and *Coimbra*, supposed to have the most populous sit of any town in Portugal.

St. Ubes is a strong fortified post, with an excellent harbour, capable of receiving ships of any burthen. This city owes its foundation to the decay of *Celor*, a town formerly situated on the other side of the river, where *Beira* now stands, a place greatly celebrated in the time of the Romans, the name of which has been altered to *Setubal*. Being left in ruins by the Moors, a company of fishermen, some few years after, having built some houses on the north side of the river, called the place *Setubal*, from the name of the old town. Such is the origin of this place, which is so well known to all the trading world, hence it is sometimes called *Setuval*.

Santarem is a very handsome and populous town on the Tagus, about 55 miles to the north-east of Lisbon. It is seated in a delightful plain, environed with mountains, which are beautifully intersected with valleys. In shape it resembles a half-moon, and is defended by a strong castle; it contains 13 churches, and an academy of history, antiquities, and languages. The name of Santarem is derived from *Santa Irene*, or *Saint Irene*, a martyr, who lies buried here. It was taken by the Moors in 1146; and in 1810 it was the head-quarters of a numerous French army, who, early in 1811, were compelled to retreat into Spain. Several kings of Portugal have kept their court here; and its district contains 15 parishes.

Abrantes is a small town on the river Tagus. It has 4 churches, besides several convents. It is noted as having given the title of duke to the French General Junot, who was defeated at the battle of *Vimiera*, which was followed by the "Convention of Cintra." By this convention the kingdom of Portugal was freed of their cruel and unfeeling enemy; and the French forces were taken to France in British vessels. Vimiera is about 30 miles to the north of Lisbon. The battle here alluded to was fought in the year 1808; the English were commanded by Sir Arthur Wellesley.

Cintra is a small town, about 12 miles to the north-west of Lisbon. It is situated between the mountains of *Cintra*, and is considered to possess the best air in all Portugal, for it enjoys a most pleasing coolness, while Lisbon is sweltering with heat. It has four churches; and it is also noted for its castle, which was originally built by the Moors.

Torres Vedras is a small but noted town, near the Atlantic, about 27 miles to the north of Lisbon. It is seated in a rich and fertile vale among mountains; and is one of the most ancient towns of the kingdom. It has four churches, three convents, and a castle.

In the neighbourhood of this place, is the celebrated spot, called the "*Lines of Torres Vedras*," to which the Duke of Wellington made his retreat after the battle of Talavera; when he was followed by the French army, commanded by Massena.

V. ALENTEJO

ALENTEJO is situated between the river Tagus and the province of *Algarva*. It is bounded on the north by Beira and Estremadura; on the east by Spain; and on the west

by Estremadura and the Atlantic Ocean. Its capital is *Evora*. A great part of this province is healthy, sandy, and barren; but so other parts are produced, vines, olives, grapes, olives, and other fruits in abundance. The oranges are considered of very excellent quality.

Chief Towns.	Rivers.
EVORA near the	Alqueva.
ELVAS	Guadiana.
ESTREMOS on the	Tarra.
BEJA and PORTALEGRE	

The city of *Evora* is about 66 miles south-east of Lisbon. Here are several churches, hospitals, courts of justice, convents, cathedrals, and universities. It is the see of an archbishop, who has a revenue of about 8,000*l.* a year. Here are some remains of an ancient Roman wall, and part of a temple of Diana, of which there are seven entire pillars standing. Here is also the famous aqueduct, which was built by Sertorius, and still conveys a noble stream of water to the city. *Evora* is seated in a very pleasant country, surrounded on all sides by mountains.

Elvas, anciently called *Helva*, and by Pliny, *Alba*, is a strong frontier city, with a strong castle and other fortifications, 120 miles east of Lisbon. Here are several convents, churches, and courts of justice, with a noble Moorish aqueduct, several miles in length, which, in some places, is supported by several stories of arches. Near *Elvas* is a forest of olive trees, three miles in length, among which are many beautiful walks and fountains. This is the see of an archbishop, who has a revenue of about 15,000*l.* a year. The neighbouring country is pleasant and very fruitful.

Estremos is one of the strongest towns in Portugal, being surrounded by ten bastions. It is otherwise noted for its earthenware, which is greatly esteemed for its beauty and fine smell; and in the vicinity are quarries of fine marble. It is 18 miles west of *Elvas*, and 100 east of Lisbon.

Beja is situated on a beautiful eminence, and is surrounded with rich and fruitful fields. It was formerly called *Pax Julia*, and afterwards, *Pax Augusta*. This city is large and populous; and has four churches and seven convents. It was erected into a dukedom by John the Second. It contains a district of 21 parishes.

Portalegre, a large and populous town, was formerly called *Portus Alacer*. It is a place of great antiquity, and well fortified. It has four churches, besides a cathedral and five convents. It is the see of a bishop, whose revenue is 500*l.* a year.

VI. ALGARVA.

ALGARVA, the most southern province of Portugal, is bounded on the east by the Guadiana, which separates it from Andalusia, in Spain; on the south and west by the Ocean; and on the north, by the mountain Serra de Algarve, and Serra de Monchique, which divide it from Alentejo. Though extremely mountainous, it is very fertile in corn, wine, oil, and all kinds of fruits.

This district is sometimes called the "Kingdom of Algarve," from its having originally formed part of that kingdom. The name is of Moorish extraction, being unknown in Spain and Portugal till the invasion of these parts by the Moors. Under the name of Algarve, was formerly included a much larger district than at present, stretching not only along the whole coast from Cape St. Vincent to the city of Almeria, in the kingdom of Granada, in Spain, but extending even to the opposite

part of Africa, in which are situated the towns of *Ceuta* and *Tanger*, and including even the island of *Foz*; whence it will be observed, that the name of *Algarve*, properly so called, bears no relation to the "Algarve" of Portugal.

Algarve being of the above-mentioned extensive signification, the kings of Portugal style themselves Kings of the Algarve, on this side and beyond sea in Africa; though they possessed but part only of the Algarve on this side.

Among the many proofs by which the Portuguese support their right, the following are the principal. As early as the year 1188, King *Sancho* dispossessed the Moors of the town of *Silves*, and in the succeeding year of many other districts. From this time he took upon him the title of King of *Algarve*, as appears from several ancient instruments, and particularly from a grant of his made to the convent of *Grijo*, on the 7th of July, 1190. The original of this grant is preserved at *Torre do Tombo*, in which he styles himself, *Sancti. Dei Gratia Portugallie et Algarve Rex*; having not only been acknowledged as such by his vassals, but also by the kings of Leon and Arragon, as appears unquestionably from several treaties cited by *Jeronimo Zurita*.

Chief Towns.	Rivers, &c.
TAVIRA on the	Segas.
FAAO near	Cape Santa Maria.
SILVES on the	Silves.
LAGOS	Atlantic.

Tavira is situated on a bay, at the mouth of the river Segas, 112 miles south-east of Lisbon. Besides walls, it has a strong castle for its defence, and one of the best harbours in the kingdom, guarded by two forts. Here are several convents, and about 5000 inhabitants. It is seated in a very fertile country, about 21 miles east by north of *Faro*.

Faro, the capital of Algarve, is a bishop's see. This city was plundered and burnt by the English in 1596. It is seated on the bay of Cadiz, not far from Cape St. Mary, called by Pliny, *Promontorium Cunium*. It is well fortified.

Lagos and *Silves* are two small towns. *Lagos* is about 110 miles south from Lisbon, and 25 east from Cape St. Vincent. It has a good harbour, with two forts to defend it. Here are several convents and courts of justice, and about 2,500 inhabitants. Here the English fleets, bound to the Mediterranean, usually take in fresh water. Off the Cape, near this town, in 1759, Admiral Boscowen defeated a French fleet.

The Portuguese language differs from that of Spain only provincially, with the exception of some words that have been borrowed from other nations; and, like the Spanish, it is esteemed strong, energetic, and very expressive. Useful learning and liberal science have long been banished from the country by the decretes, or decrees of their church; and, though there are universities at Coimbra and *Evora*, and several academies of royal institution, all attempts to diffuse useful knowledge are defeated by the tyrannic sway of superstition, which brands with the name of heresy even the improvements in natural knowledge,—such as the doctrines of *Nestor*, *Galileo*, and other celebrated philosophers; yet the ancestors of the present Portuguese, particularly about the middle of the sixteenth century, were possessed of more knowledge, with respect to astronomy, geography, and navigation, than all the

world ~~had~~^{has} been, and is hardly more, with one name transmitted to posterity as a name for literary abilities, except the celebrated poet Camoens, the author of the *Lusiad*, who was himself a great adventurer and voyager.

CHRONOLOGY.

Camoens, deservedly called the *Virgil* of his country, was born at Lisbon, in 1547, and studied at Coimbra. Shortly after his leaving the university he entered into the army, and served in Africa against the Moors with great reputation, but in an engagement before *Ceuta* he had the misfortune to lose an eye. Soon after his return to Portugal, he engaged in an expedition to the East Indies, in the hope of bettering his fortunes. Here he began his celebrated poem, the "*Lusiad*," but on his return he had the misfortune to be shipwrecked, and with great difficulty saved his life, swimming with his right hand, and supporting his poem with his left. He finished his poem in 1569, and dedicated it to King Sebastian, but his hopes of patronage were cruelly disappointed. The merits of the poet were neglected by the monarch, and Camoens, feeling all the miseries of indignant virtue, expired in the midst of his ungrateful countrymen, a prey to the deepest wretchedness, in 1579. Admired for the boldness of his descriptions, the unaffected display of his learning, and the happiest flights of a sublime imagination, Camoens is yet censured for the obscenity of some of his verses, and for an injudicious mixture of heathen mythology and Christian truths. The *Lusiad*, however, will always rank high, and very high in the list of heroic poems. The people of Macao, in the East Indies, are still proud of shewing a cave where Camoens amused himself in writing his *Lusiad*. This excellent poem has been translated into French once, twice into the Italian, four times into Spanish, and into English by Sir Richard Fanshaw and Mr. Mickle; but the latter is the best. The author of the *Lusiad* is considered to have done more honour to his country than either the hero or the discoveries it celebrates ever brought glory or advantage.

(To be continued.)

CHRONOLOGY.

CHRONOLOGY is the art of measuring time, in order to determine with accuracy the events mentioned in History. Its constituent parts are *centuries*, or *ages*, *years*, *months*, *weeks*, *days*, *hours*, *minutes*, *seconds*; &c.; and in order to adjust these parts more orderly and correctly, we make use of *epochs*, *eras*, *cycles*, &c. for the further and full illustration of History.

Chronology is not confined to past times and fixing ancient epochs only, but it extends itself to other uses, particularly in the Church. By the help of this, we fix the moveable feasts; and among others, that of Easter; and by the means of *epochs*, *eras*, and *cycles*, we form the CALENDAR. So that there are two kinds of Chronology; one purely historical, founded on facts transmitted to us by antiquity; the other, *Mathematical* and *Astronomical*, which settles the different epochs by calculations and observations, and serves to regulate the seasons when the Feasts of the Church should be celebrated.

The usefulness of CHRONOLOGY is such, that it has not been unaptly denominated, "One of the eyes of History;" for as by HISTORY, the particulars of events are recorded, and by GEOGRAPHY, the place marked out where such

events took place, so CHRONOLOGY fixes the period when they took place, and thereby enables us to know the dates of those events; the particularities of each in HISTORY are easily found: thus does CHRONOLOGY serve many interesting purposes in HISTORY, in BIOGRAPHY, in ANTHROPOLOGY, in various departments of literature, science, and art, &c.

CHRONOLOGY may be divided into three parts; namely, *Sacred*, *Ancient*, and *Modern*.

SACRED CHRONOLOGY is that which relates to the Jews, God's chosen people, in their sacred writings, and epochs belonging to which are—

The Creation of the World,

The Deluge,

The City of Abraham,

The Foundation of the Temple, and

Cyrus, or the end of the Captivity.

ANCIENT CHRONOLOGY is that portion of time in which History relates the accounts of all countries and kingdoms, down to end of the Roman Empire. The principal epochs belonging to which are,

The Destruction of Troy,

The Olympiads,

The Era of Nabonassar,

The Building of Rome,

The Philipic Era,

The Era of the Seleucidae,*

The Julian Epoch, and

The Dioclesian Era.

MODERN CHRONOLOGY is that period of time included in History from the Destruction of the Roman Empire to the present period. The most remarkable epochs belonging to it are—

The Nativity of Christ,

The Era of the Hegira,

The Era of Jezdegird, and

The Julian Period.

That Era which is chiefly regarded among Christians is the Epoch of our Saviour's ministry. The two principal Eras by which Europeans reckon, are, from the Creation of the World to the Birth of Christ, which, by chronologers, is reckoned 4004 years; and from the birth of Christ to this period.

A further explanation of the above mentioned Eras or Epochs, will be given in a future number.

OPTICAL ILLUSIONS, ANTIPATHIES, AND SUPERSTITIONS.

(Continued from page 509.)

ANTIPATHIES of animals (and among these we include the human species) arise mostly from something that offends the senses, the sight, the smell, the hearing, the feeling, or the taste, and one or more than one of those faculties may be affected by antipathy, without a like sensation on the other; for instance, the colours of a flower may gratify the sight, but its smell may be extremely repugnant to our sensation. Again, what can be more disagreeable than the toad-like figure of the turtle? yet epicures of the most exquisite taste, though taking no pleasure in its appearance, are highly delighted with its savoury substance. Our senses, therefore, though not in open hostility, are often neutral with regard to the

* Called in the Book of MACCABEES, "The era of the Greeks."

propensities of each other, and do not directly agree in their antipathies; it is this variation that forms and determines the different dispositions of animals; and, with respect to man, constitutes that variety of choice so prevalent with the species, and which often manifests itself in what is called the ruling passion.

The reason why one of the senses may be offended, and not another, is, because of some harm or injury that the organ is liable to, or susceptible of, by which the sensation is conveyed to the nerves of the cerebrum or brain, and which sensation is not directly sympathetical with the peculiar susceptibility of the other organs of sensation; the mind is influenced, by what *pathologists** may call consent of parts, or of passions, but not by any auxiliary action or motion of general organization. In pursuance of these observations, it will be necessary to mention some animal antipathies peculiar to the outward senses, of which man also partakes; and then to notice those which belong to him alone, as a rational creature, and which arise from mental influences, not dependent on the impressions of physical effects; and lastly, to make some remarks on the antipathies of plants and vegetables, the existence of which, is a fact, and one of the most curious in the natural world.

First, With respect to animal or physical antipathies, almost every peasant is acquainted with the rage, and fury of a bull, at the sight of anything of a red or scarlet colour; his eye is pained by the piercing ray that reflects this shade on his optic nerve; and in revenge, he attacks the object that he thinks inflicts his suffering. A remarkable instance of this antipathy occurred a few years since in Hyde Park, where some soldiers were exercising. Either by accident, or for the purpose of grazing, a bull had been let into the park, and scarcely had the military phalanx been stationed, before the animal, offended by the red coats, charged furiously on the rear of the line, and with one pair of horns routed scores of bayonets, swords, and halberds, in a few moments, nor could he be easily withdrawn from the field of combat, without the slaughter of his fancied aggressors.

The same antipathy is entertained by the turkey; the male in particular will exhibit signs of the most outrageous anger, at the display and shaking of a handkerchief or cloth of a red colour.

The lion is also said to dislike certain colours; but his ear is known to dread the crowing of a cock: to such shrill and piercing sounds he has an unusual antipathy, and an unaccountable dread, though of all animals he is accounted the most courageous. The cat has a natural aversion to water, and will use every art and manoeuvre to avoid wetting her feet, if possible. This animal has also a strong antipathy to dogs, and to all nauseous smells. Cattle have also a rooted aversion for dogs; and almost all quadrupeds dislike high winds, and are terrified by the sound of thunder. In facing a storm the pig will shew signs of the greatest distress, and appear to contend, as if with a visible foe, a circumstance that has induced ignorant country people to say and believe that pigs see the wind, as well as feel it.

(To be continued.)

* *Pathologist* is one who treats on Pathology, which is that part of medicine which relates to the distempers, with their causes, differences, and effects, incident to the human body. It is derived from two Greek words, *Pathos* and *Logos*, the former signifying passive, the latter a discourse, a description.

AN EXPLANATION OF MADE USE OF THE PLATE.

(Continued from page 520.)

BISSEXTILE, or LEAP-YEAR, is called by the Romans, in account of their reckoning the sixth day of the calendar of March twice over. Leap-year contains 365 days, which happens every four years, when a day is added to the month of February, to make up for the six hours which the sun spends in his course each year beyond the 365 days usually assigned to it. Leap-year may be known by dividing the year by 4, and if nothing remain it is leap-year, but if 1, 2, or 3 remain it is so many years after.

CANCER, the Crab, is one of the twelve signs of the zodiac, into which the Sun enters about the 21st of June, or upon our longest day. The stars in this constellation are seventy-five in number:

Obs.—The Tropic of Cancer is what is called a *less circle*, a sphere, parallel to the equator, and passing through the beginning of the sign Cancer: all the inhabitants within this space have the sun vertical, or perpendicular, twice a year, and are situated in the torrid zone; but to all the inhabitants out of the tropic, the sun is never vertical.

CAPRICORNUS, or Capricorn, is the tenth sign of the zodiac, into which the Sun enters about the 21st of December, or upon our shortest day. Upon the ancient medals it is represented in the form of a goat, with the hinder parts of a fish; for the sun entering that sign on the winter solstice, from whence he begins to ascend towards the northern hemisphere, the hieroglyphic sign of a goat, which is fond of climbing, and ascends as it browses, seemed to be proper to represent that circumstance.

CARDINAL POINTS are the east, west, north, and south points of the compass. The word *cardinal* signifies principal, chief, supreme. Thus, *cardinal winds* are those that blow from the four corners of the compass. The *cardinal signs* in the zodiac are *Aries*, *Libra*, *Cancer*, and *Capricorn*. In ARITHMETIC, *cardinal numbers* are such as express positively how many things there are; as, 1, 4, 8, 10, 12, &c. In MORALITY, the *cardinal virtues* are, justice, prudence, temperance, and fortitude.

CENTRIFUGAL FORCE is that force by which any revolving body endeavours to fly off from the centre of motion in a tangent to the circle which it describes.

CENTRIPETAL FORCE is that by which any revolving body is made to tend towards the centre of its orbit.

CHARLES'S WAIN consists of seven remarkable stars in *Ursa Major*, or the Great Bear.

CRYSTALLINE HEAVENS, in the Ptolemaic system, two solid orbs, by means of which the ancients attempted to account for the apparent motion of the fixed stars.

COMETS are certain erratic or wandering bodies belonging to our system, which move round the sun in very eccentric orbits, and are principally distinguished from the planets by their tails, or some hairy or nebulous appearance. When comet is eastward of the sun, and its light reaches before, it is said to be *bearded*; *tailed*, when westward of the sun, and the train follows it; and *haired*, when diametrically opposite to the sun, having the earth between it, and all its tail hidden, except a few scattered rays.

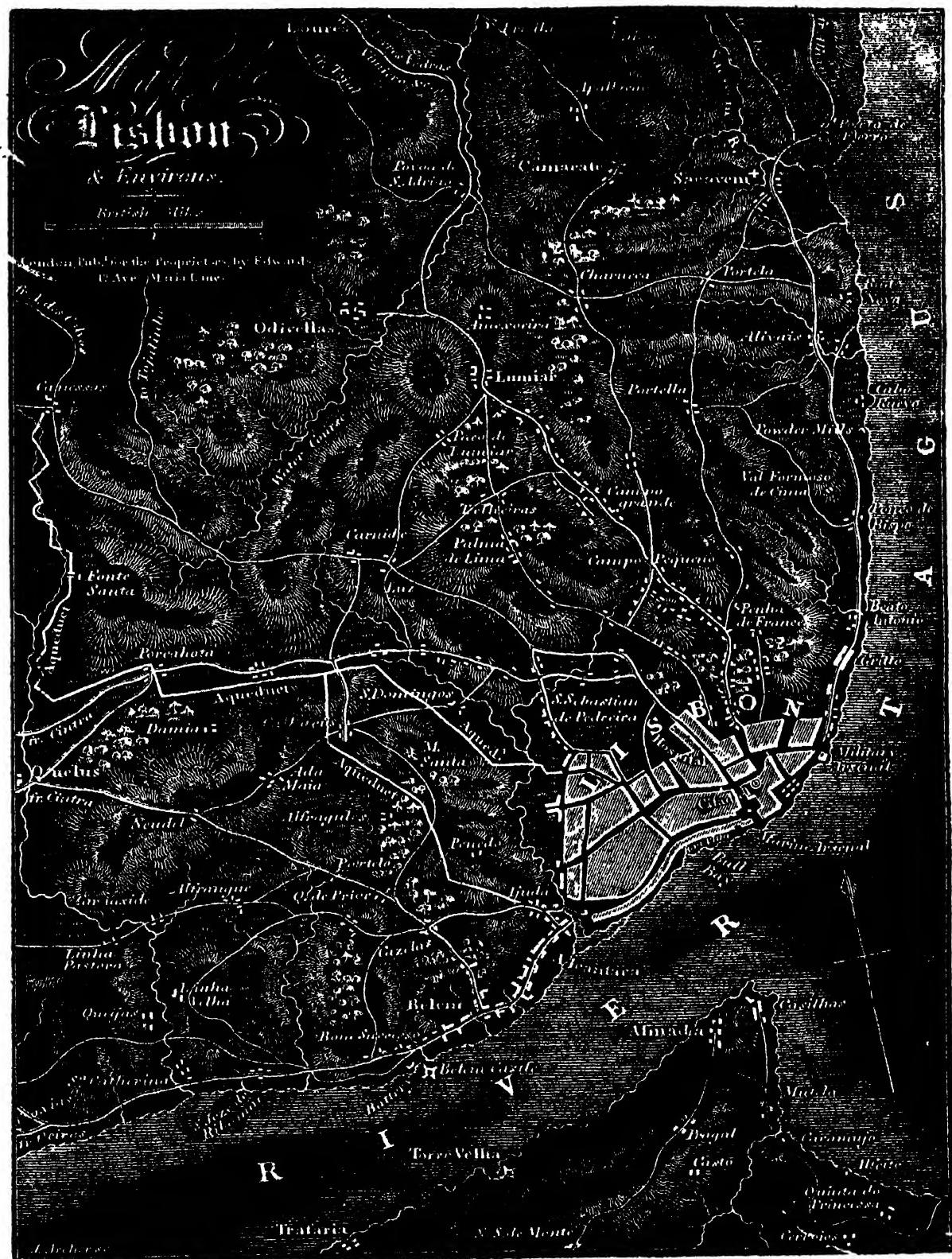
(To be continued.)

From the very great interest that is now excited throughout all Europe by the present state of affairs in Portugal, we are induced to devote a very considerable portion of our present, and also of our next number, to an account of that country: we therefore intend giving, in No. LXXX., a brief description of Lisbon, Oporto, &c. accompanied by a graphic sketch: with several other useful and interesting articles; and also an explanation of the Plate in the present number.

No. LXIX.]

GUIDE TO KNOWLEDGE.

PRICE
ONE PENNY.



OF THE PRESENT STATE OF PORTUGAL.

As the present state of Portugal is the great point of attraction to all the world, and especially to the people of Great Britain, on account of the connexion and commercial relation between the two countries, some particulars of her present condition may be acceptable to our readers.*

In order to come at this object with a degree of accuracy and impartiality, it will be necessary to give a short history of some events that have occurred from the time when it was deemed imperative on Great Britain to interpose, in behalf of the Portuguese people, against the designs and aggressions of the Count of Spain. The transactions in Portugal of a political nature, previous to that period, do not bear much upon the question as to present circumstances and events; though, from the close of the Peninsular war, the history of Portuguese affairs is not only interesting, but also explains to us the cause of the subsequent occurrences.

In the year 1826, on the 30th of October, the first session of the Cortes was opened, with a long speech from the regent, in which the most unequivocal promises were made to maintain the rights of the people, by a representative government, and extolling the constitutional charter, and mentioning the oath taken by their legitimate sovereign, and the projected marriage of Don Miguel with the young Queen, Dona Maria.

The encouragement of commerce, of education, and public instruction, are also recommended in the speech; and the raising of supplies, &c. is conceded to the Cortes, as the authority most compatible with the civil liberties of the people; and the establishment of public credit is strongly and confidently anticipated.

Sir Charles Stewart, the British ambassador, was recalled shortly after the commencement of this session of the Cortes, on what account it is not important to mention; About this time great desertions took place among the Portuguese military, and it was evident a contest was at hand. Troops were collecting in Spain, and marching to the frontiers, and the design of an insurrection and invasion became publicly manifest; and, on the

1st of November, 1826, the Marquis of Cravas and Vice-Count Montalegre entered with an army the province of *Tra leos-Montes*, and, on the 27th, another body of troops, led by Malveira. They then advanced into the province of *Hentoco*, and raised the standard of *Civil War*.

The principle upon which this rebellion was excited was to overthrow the constitution and the Cortes, and, through the influence of superstition and hypocrisy, they endeavoured to delude the people into an acquiescence and support of their cause; and, no doubt, the whole movement was connected with that design which ultimately succeeded of placing Don Miguel on the throne.

* As the situation and extent of Portugal, together with many other particulars, are given in our preceding number, we need not repeat them here, it not being the ancient history of Portugal, nor her geographical situation and circumstance, that we have in this instance to investigate, but more particularly her condition, relative to her government and the present character of her institutions, and the state and destiny of the people. *For a complete view of Portugal, the reader is particularly referred to No. XXIX., in which is given a very copious and full Map of the whole country.*

† An Historical View of the Revolutions in Portugal, by an "Egyp-

tianus," as published by Mr. Murray, Albemarle-street.

‡ Sir Charles being a true Briton, was an ardent friend of freedom, and therefore no great favourite with the monks and privileged orders

The posture of affairs in this critical emergency compelled the Cortes to suspend the ordinary functions of the law, and to seize on the disaffected, and even suspected magistrates. Some troops were sent against the insurgents, but nothing effectual was done; and the hopes, fears, and expectations of the people vibrated according to the uncertainty of the events that were likely to occur.

The arrival of the British troops in Lisbon soon put an end to this state of suspense on Portuguese affairs, and caused the court of Spain to rescind the instructions secretly given to the commander of their forces. They did not wait the approach of the British army, but scamped away into Spain as fast as they could; but, finding that the English remained inactive at Lisbon, they attempted a more bold and powerful invasion, in consequence, the British general immediately moved upon *Coimbra*; and this manoeuvre put them again entirely to the rout. The specific object of protecting the Portuguese from foreign invasion being accomplished, the forces sent out for the protection of that country returned home; and the ministry of Great Britain, acting on the principle of non-interference with the internal affairs and government of other countries, left that distracted people to settle their conflicting scenes and opinions among themselves.

The *Constitution of Portugal*, signed by the king, and dated at *Rio de Janeiro*, in the Brazils, April 29th, 1826, consisted of 115 separate and distinct articles, and was very skilfully drawn up, and solemnly ratified and confirmed. The *first* part defines the legislative authority, and its powers, constituting the *Cortes* in two chambers, and the kingly dignity and prerogative; the *second* part relates to the elections of the Deputies; the *third* to the Peers; the *fourth* prescribes the promulgation of the laws; the *fifth* concerns the elective franchises; the *sixth* specifies the peculiar moderating power of the king; the *seventh* the executive, or magisterial authority; the *eighth* the royal family and revenue; the *ninth* the succession to the throne; the *tenth* fixes the responsibility and duties of the ministry; the *eleventh* the council of state; the *twelfth* the military organization; the *thirteenth* the judges and tribunals of justice, the *fourteenth* the provincial municipal government, the *fifteenth* of corporations; the *sixteenth*, public revenue; and the last explains the general dispositions and guarantees of the civil and political rights of the people. Those different heads, or sections of their charter, were divided into 115 separate, well defined, and explicit articles.

We cannot look at this document in its detail, without wishing that it had been carried into practical effect, and that a peaceable settlement of the government of our ancient and faithful ally had been substantially effected. But circumstances that Providence alone could avert have arisen, which render that devoted country a scene of commotion, bloodshed, and desolation; and that too, arising from the most unjust usurpation of one brother, and the animosity and vengeance of another. So unnatural a contest is viewed by all good persons with horror; and the sacrifice of thousands, in the struggle for regal

§ *MUNICIPAL* is a term applied to laws that obtain in any city or province; and those are called municipal officers who are elected to defend the interests of cities, to maintain their rights and privileges, and to preserve order and harmony among the citizens.

|| See the Historical View before-mentioned. The whole copy of the charter is too long to be inserted in this abridged and brief account of the civil state of Portugal.

power, is a cruelty that nothing can excuse, and a waste of blood and treasure that success cannot compensate. Civil war is, of all powers, the most hideous and destructive; the nearest and dearest friends may be enlisted, or forced, under hostile banners, to encounter and slay each other in battle, instead of meeting in the cordial balm of amity and kindness; brothers, whose weeping parents mourn their fate, may pierce the hearts of each other, and mingle their kindred blood in the same torrent of battle's purple streams, falling less tortured by the agonies of death, than by the sight of an expiring brother! — slain by the hand that their common mother nursed into strength and activity! “If Cain shall have vengeance, what shall be done to those who caused ten thousand fratricides; nay, perhaps, also as many parricides!”*

The continuation of this unfortunate dispute renders it necessary for England to keep up a naval force off the Tagus, in order to protect British subjects and their property; so that she is put to the same expense as if actually at war herself; but, as to any interference, all parties think it not warranted by international law and justice: the law of humanity, however, almost demands an infringement of the policy of forbearance.

Scarcely had the constitutional charter been adopted, than the aspiring Don Miguel began to aim at the crown; and by the advice of the priests, and a superstitious faction, his ambition prompted him to seize on the dominion; and by the intrigues of those discordant spirits and the discontents of the people, the charter was torn to pieces, and its fragments scattered to the winds.

Whatever pretensions Don Miguel might have, through the alleged abdication of his elder brother, who had exiled himself from his country when he retired to the Brazils, the right of DONNA MARIA, to be Queen of Portugal, stood clearly in succession; but the doctrine of the ministry of France and England was non-intervention, and to let the people choose between a present tyrant, and one that might, very probably, be so likewise; admitting, by this conduct, the right of a people, if in their power, to set aside legitimacy, and elect their own sovereign,—a precedent not the most promising for the dynasty of either nation, and a doctrine which DON PEDRO soon demonstrated he did not intend to acknowledge as a principle of justice or an act of necessity; he therefore landed in Terceira, one of the Azores, or Western Isles, that had openly avowed to advocate and support the cause of DONNA MARIA; and there collecting together his friends, and such as he could engage in his cause, he determined on a descent on the shores of his native country, and to decide the pretensions of his brother and himself by the sword. Having, after some months, assembled a force that was thought adequate to the enterprise, he set sail and landed near Oporto, taking possession of that city with scarcely any opposition or difficulty.

Both parties now eagerly set about raising recruits, and furnishing themselves with munitions† of war; and as they could not find soldiers of skill in military tactics, and of unshaken integrity, with undaunted courage, in their own nation, they each of them, by their agents, commenced enlisting men both in France and in England,

and endeavoured to draw over officers to command them from among the veterans of these countries, in which they were but too successful: large bodies of men were sent out on this sanguinary errand, and the rulers of France and England seemed to connive at the innovation of their laws relative to foreign enlistment. Thus the fate of Portugal was to be decided, not by its own population, but by knights errant, and warriors of foreign nations, while the natives might look on, like spectators at the jousts and tournaments‡ in the days of chivalry; but with this difference, that, instead of entertainment, they were to experience the ravages of misery, famine, and desolation.

Previous to his usurpation of regal dominion, DON MIGUEL had visited England, taking his way through France from the court of Vienna, where he had been brought up and matured in the political maxims of that arbitrary government: the ostensible and avowed object of this journey was to confirm and consolidate his appointment to the Regency of Portugal, by the consent, and under the protection, of those powerful kingdoms: he was cordially received by the British government, and treated with every mark of respect, as the agent and lieutenant of his brother, DON PEDRO, and his niece, DONNA MARIA, the acknowledged legitimate Queen of Portugal; yet, in defiance of these demonstrations, and the right of succession, on his arrival in Portugal, as before stated, he instantly began to prepare for an usurpation of the sovereign authority, and to level the way by removing all the obstacles to his ambition. Those who opposed his schemes were seized, imprisoned, and put to death; little regard being had even to the appearance of justice, or the evidence of facts. He had the clergy in his favour, who gloried in an aspiring youth that was likely to confirm and support them in their extortion and avarice, and to strengthen their influence over the peasantry, by upholding the monastic institutions, and all the delusive superstitions which they had established. Thus, by the united influence of fury and fanaticism, a fragile throne was formed, based on fraud and injustice; while the victims of power were immolated at the shrine of the priesthood, and their blood poured out at the altars of the modern Mammon. §

From this period, the friends of freedom determined to risk every thing for the restoration of the young queen; not that they cared by whom the country should be governed, but because, under the usurper, their liberties were annihilated, and their lives held in perpetual jeopardy; consequently they hailed the arrival of DON PEDRO, at Oporto, as an event auspicious to their wishes for recovering the charter, and the revival of their liberties, as well as to secure their personal safety; and this state of things aroused the sympathy of thousands who participated in the principles of universal freedom.

Oporto being possessed by Don Pedro, who had there planted the standard of legitimacy, no time was lost by his opponent and competitor, in preparing to besiege that place; and it was accordingly invested with all possible speed. The operations of a siege are generally tedious, and but little interesting in the detail; the attacks, bombardments, and sorties, are still going on;

* FRATRICIDE, the murder of a brother. PARRICIDE, the murder of a father.

† MUNITION, ammunition. STORES, &c. for carrying on a war; fortification, a strong-hold.

‡ A military diversion; a mock encounter.

§ MAMMON, a feigned deity among the ancient idolaters, the god of riches. He was supposed to be fond of precious things; perhaps an inventor of money, or a searcher after precious metals. (Figuratively, riches.)



LISBON, VIEWED FROM FORT ALMADA.

and the description of the horrors, privations, and miseries of the people, and the destruction of the business, caused by a continuation of successive cannonading, is truly affecting and appalling.

At the moment this account is preparing for the press,* every thing is left to doubt and uncertainty respecting the progress of the war and the probability of its termination: the cause of the constitutionalists has, however, lately triumphed, in the naval victory obtained by a British officer† and British seamen, in the service of Don Pedro, who most heroically attacked a vastly superior fleet of ships, belonging to Don Miguel, and captured nearly the whole of them! The particulars of this achievement are too recent to need a recapitulation in this brief history of the state of Portugal. The present state of that country exhibits a deplorable condition of the neglect of agriculture; and the peasantry are reduced to the utmost distress. The vintage of this year, 1833, which, in luxuriance, equals that of 1830, one of the most prolific on record, is in danger of being almost wasted for want of management; and, indeed, for want of vessels in which to manufacture and store the wines that might be produced from the abundance of grapes, hanging ungathered, or destroyed by the foragers of the adverse armies. The corn also, in some places trodden down, or left unreaped, shews the miseries of a civil war, and the privations the people have to suffer.

With respect to the political state of Portugal, it is not competent for Englishmen to determine, as to the estimate proper to be formed—the opinions, sentiments, and principles of the common people are so materially different from those of the natives of Britain; and they are, perhaps, no more prepared to receive and support rational freedom than our ancestors were five hundred years ago, when, doubtless, the introduction of such a distribution of privileges as are now enjoyed would have filled the whole kingdom with disputes, disorder, and desolation; but the steady progress of knowledge has effected, by degrees, in England, what no sudden revolution in any country ever did, or ever can, effect.

The extensive opposition to the charter of 1826 displayed the practical proofs of these observations; for nothing could be more consistent with liberty and equity than that charter; yet the people turned away from it, as one just opening his eyes would turn from the *glare* of a meridian sun; it pierced too keenly the optics of reason, that had for so long been shut by the eye-lids of superstitious ignorance; and the priests were, and are still,* determined to persuade the multitude to be led on blind-folded, *lest they should smart from the effect of the rays of light and intelligence*.

The Cortes also, when assembled, both in 1820 and at subsequent periods, have manifested the most decided proofs of their imbecility and incompetency for managing the affairs or legislating for a free people: they know not the medium between abject submission and absolute tyranny; and if not holding the curb with painful re-

* August 1, 1833.

† Late Captain, now Admiral, Napier.

s'straint, they bunglingly let slip the reins on the neck of licentiousness. Thus it has occurred that, by giving authority to those who themselves had been but just manumitted,* they received a commission which they could not conduct; and the affairs of state were ruined by embarrassments that idle squabbling, childish jealousies, and general inexperience, introduced into their councils.

In framing their constitution, and forming their laws, they seemed to have forgotten the true character of their own people, as well as the dissimilarity of their condition from that of other countries; and, as if they had no original ideas of their own, they proceeded to model their laws by the enactments and restrictions of other nations, and particularly those of England.

Every nation has, with respect to its population, some peculiar prejudices, or habits, or sentiments; and if the lawgivers intend, as they ought to do, the happiness of the people, those peculiarities should not be disregarded in the national councils; but, above all other things, the true interests of the kingdom, its agriculture, commerce, and manufactures, ought to be well understood and judiciously protected: it is for this end all governments are established, and without a competent knowledge of these things, a DEMOSTHENES and a CICERO would only, by their eloquence, sooner bring their country to ruin. Portugal now lies desolate, a prey to war and famine: she has the commiseration, but not the aid, of Europe: let us hope, that she may soon rise a phoenix again, from the flame in which she is now involved!

LISBON.

The preceding engraving is a graphic sketch of Lisbon. This city is beautifully situated on the north side of the Tagus, about 10 miles from the sea. Like old Rome, it stands on seven hills. Lisbon has one of the finest harbours in the world, which is capable of containing upwards of 10,000 sail of shipping without being crowded.

Before the dreadful earthquake in 1755, most of the private houses made a very miserable appearance; but now it has many magnificent buildings, particularly the square called Rossó. Previous to that calamity it contained about 30,000 houses, 150,000 inhabitants, 40 parish churches, besides its monasteries, 26 gates on the side of the Tagus, and 17 on the land side. It had 20 monasteries for monks, and 18 nunneries. According to Mr. Barrett, he "supposes that two-thirds of the city were levelled with the ground, and such as withstood the shock received considerable injury. Besides these, a great number of large churches were thrown down and destroyed, 2 royal palaces, and many convents, nunneries, hospitals, and other public edifices. The king and royal family were in their carriages, passing to a palace in the country, and, happening to be in an open space, were rescued from the miserable fate which they beheld all around them. Many who had lived in opulence, ease, and splendour, were reduced to the most distressing want, even of the common necessaries of life; whilst lingering and tormenting deaths awaited thousands who were overwhelmed by the falling buildings, or consumed by the spreading

flames, which burst from the numerous fires, and formed an almost general conflagration. Those of the wretched inhabitants who escaped destruction in these horrid shapes were forced to reside in the open air, scarcely able to procure a sufficient subsistence for their almost exhausted bodies." Mr. Barrett says, "that 90,000 persons are supposed to have been lost on that fatal day. Imagination can scarcely form to itself a scene of confusion, horror and death more dreadful than this. After the shocks of the earth had subsided, the fire continued raging for many weeks, by which the pestilential air, produced from the numerous dead bodies, was purified, and the surviving remnant of the inhabitants thereby preserved their health, although surrounded by putrefaction."

For the security of Lisbon there is a fort at the mouth of the river on each side, and a bar that runs across it, and which is very dangerous to pass without pilots. Higher up, at a place where the river is considerably contracted, there is a fort, called *Torre de Belém*, or the Tower of Belém, under whose guns all ships must pass in their way to the city; and on the other side are several other forts. (*See the Plate.*) The king's principal palace is seated

the hospitals, that called the *Great* is worthy of particular notice. This hospital is obliged to receive all persons, of whatsoever degree, nation, or religion, without any exception. At the village of Belém, near Lisbon, is a noble hospital for decayed gentlemen who have served the king, and have not a sufficiency to maintain themselves. That called the *House of Mercy* is also a noble charity. In the centre of the city, upon one of the highest hills, is the castle, which commands the whole, being large and ancient, and having always a garrison of four regiments of foot. The cathedral, a heavy gothic edifice, contains great riches.

The famous aqueduct of Alcantara, which supplies the city of Lisbon with water, is a noble work, and deserves the attention of every traveller: it is composed of two different kinds of arches, the one Roman, the other Gothic, by which the uniformity of the building is destroyed. Although the earthquake was so dreadful to Lisbon and its vicinity, this building withstood the shock, with the exception of some of the key-stones being thrown out, when the centres closed again. At the village of Belém are a handsome royal palace, and a magnificent monastery, dedicated to St. Jerome; and the whole circumjacent country is extremely pleasant, abounding in olives and other fruit trees. Lisbon contains about 200,000 inhabitants.

The Portuguese sensibly exhibit the effects of a warm climate, in their dark hue, and in those traits of national character which are usually found in warm climates. These are ardent passions, a strong propensity to revenge, superstition, indolence, joined with abstemiousness, the habit of submitting, contentedly, to a very scanty share of the comforts of life. But it must not be forgotten, that there was a period when this small kingdom was the seat of more enterprise than existed at other country in the world. This was in the 15th century, in the time of Prince Henry, and of Emmanuel I. As a people and a nation, the Portuguese and Spanish have one common origin, from which arises a great similarity in their language, customs, laws, and government. But with all this similarity of character, there has been a perpetual enmity between them, which time seems to have converted into habit, and policy formed into a system.*

* MANUMIT, to set free, or deliver from slavery.

† The Portuguese were formerly the most noted navigators in the world, and the most renowned of all people for their discoveries and the extension of trade and commerce. They were the first to sail round the Cape of Good Hope, and to explore the countries lying to and upon the Indian and Pacific Oceans.

* See Pinnock's Modern Geography.

The following observations of Dr. Southey are worthy of notice :—

"The Spaniards despise the Portuguese ; the Portuguese hate the Spaniards." "The Spaniards in their national songs threaten the Portuguese with invasion ; the Portuguese content themselves with defying the Spaniards." "Strip a Spaniard of all his virtues, and you make a Portuguese of him," says the Spanish proverb. "I have heard it more truly said," says Dr. Southey, "Add hypocrisy to a Spaniard's vices, and you have a Portuguese character." "Almost every man in Spain smokes ; the Portuguese never smoke, but most of them take snuff. None of the Spaniards will use a wheelbarrow ; none of the Portuguese will carry a burden : the one says it is only fit for beasts to draw carriages ; the other, that it is fit only for beasts to carry burthens."

PORUGAL.

(Continued from page 527.)

A BRIEF DESCRIPTION OF LISBON, &c.

(As seen in tranquillity and peace.)

HAVING given a general account of the principal division of Portugal, together with the chief towns, we will now take a more particular view of the two great cities, Lisbon and Oporto, and their environs, with a short tour through the most interesting parts of the provinces.

We will suppose that our first entrance into this kingdom shall be from the sea : and that, having entered the Tagus, we land at *Cintra*, at the foot of that mass of conical mountains forming *Cape Roxent*, where the shady lofty trees of the north of Europe unite with the fragrant orange trees of the south.

This spot is, indeed, not only a pleasing relief from the sameness of water and sky, but is even charming in Portugal ; for these romantic shades and refreshing brooks are infinitely more delightful in a country where a potent sun burns up all vegetation, and where even a sight of running water conveys a cool and refreshing idea, than they can possibly be in our colder climate ; and, in fact, the spectator may almost imagine himself in some enchanted bower, when, from this romantic and highly picturesque spot, he contemplates the scorched plains which lay below it. In short, as an interesting traveller has described it, "*Cintra* is the abode of love ; for in the midst of summer the coolness of the evenings is delightful, and the scattered situation of the houses, the rocks, the gardens, and the woods, afford innumerable opportunities for the delights of pleasure in solitude."

Passing this delightful spot, the approach of Lisbon is grand in the extreme :—a vast expanse of water,—a river, in many places, of more than six miles in breadth,—the numbers of vessels of all descriptions,—the extensive city stretching along the northern bank, and proudly rearing on an amphitheatre of hills,—the cultivated heights covered with villas, monasteries, churches, gardens, and olive woods,—all combine to present a most extraordinary assemblage of beauties to the traveller.

At the first entrance into the Tagus, when the limits of the city can scarcely be distinguished in the distance, the majestic, conical, and rocky mountains of *Cintra* form a most delightful and charming foreground to the landscape ; but as the voyager advances, he more distinctly perceives the town itself on its seven hills rising with a

degree of majesty which fills his mind with wonder and delight.

Such is *Lisbon* on its first approach ; nor is it surprising that the Portuguese should consider it as the finest view in the world, and adopt that proverb which says, "He who has not seen *Lisbon*, has seen nothing."

The interior of this city, however, forms a striking contrast to the outside ; in many places, from its situation, it is so steep, that it is literally a great labour, in that climate, to walk along the streets ; and even the lower street, which runs along by the side of the river, rises and falls at intervals very considerably.

During the heavy rains, the waters rush down these declivities in such torrents that they are often impassable instances have often occurred of men, and even horses, having been carried away by the rapidity of the fall, and almost swept into the river. Yet, as all inconveniences have their attendant good, this possesses the advantage of washing away the filth, and of cleansing the town, which, otherwise, the indolent Portuguese would have left for the interference of some of their saints.

The streets are also very irregularly built ; they are badly paved, generally narrow, and present a mixture of elegant mansions and of small, wretched, and even squalid houses. In many parts, indeed, these habitations are but thinly planted ; and the stranger is often surprised at meeting not only with gardens, but even with corn fields amongst the various buildings, which, added to the dirtiness and the gloomy solitude of the outskirts, produce an effect resembling the cities in Moorish and in other eastern countries. During the day, all the filth of the city is suffered to lie in heaps, even in the most frequented streets, and when not washed away by the rain, these collections of indolence and filthiness require some skill in walking not to sink in them ; nay, even in some of the greatest thoroughfares, there is nothing on which the foot passenger can pass but a narrow path winding near the houses ; and as all the carts keep as near to the houses

possible, in order to take the horses out of the deepest part of the mud, it often happens that the unfortunate passenger receives at the dirt and filth which is thus most lavishly splashed about. But the night is even worse ; for though formerly the city was lighted, yet lately this practice has been laid aside ; and as it is the custom to close the window-shutters at an early hour, there is no light whatever to diversify these scenes of dirt and desolation ; to which we must add the annoyance of whole troops of half-starved dogs that are suffered to wander about here, many hungry wolves, and are often almost as dangerous as the ragged banditti who are suffered by the police to commit their depredations unmolested. The unfortunate stranger, too, is constantly pestered with whole hosts of beggars, a trade which seems not confined to any particular class of society, but is practised under various pretences by all :—one species of it is for the relief of souls in purgatory ; for which purpose the religious fraternities are permitted to collect alms, the greater part of which they are said to apply to their own account.

Wretched as is the interior of this proud city, yet its environs have a striking peculiarity of appearance ; for the whole vicinity, to a considerable distance from Lisbon, is covered with large gardens, surrounded with lofty walls, between which it is most tiresome to travel, even for leagues, in some directions, without being able to see any other object, and being in continual danger of mistaking the road.

This taste, which is singular, has been justly distinguished as *Moorish*, or *Orientals*, and *Moorish*, and may be said to have had its origin in their constitutional jealousy, which prompts them to choose a close fortification, in preference to an open garden.

These extensive inclosures are called *qasita*, and they are often very large, and laid out rather for profit than for pleasure, containing within their walls plantations of orange and olive trees, and sometimes even corn fields; they have, in general, a large garden-house situated at one end, where their owners and families are accustomed to spend part of their summer in almost monastic seclusion.

When the traveller penetrates into the interior of the country, he soon observes that the great part of the eastern districts consists of extensive heaths, which have an undulating appearance, from the number of small hills with which they are intersected. The soil in most places is sandy, and swampy tracts are seldom found, as, in general, the extreme aridity of the soil is the cause of the great barrenness of these wide extended plains and hills.

Notwithstanding this want of fertility and cultivation, it is extremely pleasant to traverse this part of the country in the spring, when the beautiful varieties of the heath plants, and the charming *cisti** of these southern regions are all in their highest bloom, and the mild exhilarating atmosphere is filled with innumerable perfumes. This variety of shrubs is indeed uncommonly great, and presents a thousand delights to the botanist, for their beauty far exceeds that of our northern plants; besides which, they are evergreens, and are exquisitely beautiful even in winter. Of these heaths, one species grows to the height of six feet, and when in bloom, is entirely covered with red flowers, presenting a most lively appearance; yet, notwithstanding all this profusion of beauty, these solitary tracts soon become irksome to the traveller; for where the romantic and sublime are wanting, no beauty of country can long be pleasing, unless intermingled with cultivation.

A TABLE OF THE SUN'S RISING AND SETTING FOR EVERY FIFTH DAY.

August 1, sun rises 19 min. after 4, sets 11 min. after						
6, ... 27	....	4,	..	33	....
11, ... 35	....	4,	..	25	....
16, ... 44	....	4,	..	16	....
21, ... 53	....	4,	..	7	....
26, ... 2	....	5,	..	38	....
31, ... 12	....	5,	..	48	:	

N. B. The intermediate days may be easily calculated.

PHASES OF THE MOON IN AUGUST, 1833.

Last Quarter	8th day, at 5 in the afternoon.
New Moon	15th 2
First Quarter	22d 6 in the morning.
Full Moon	30th 6

HISTORICAL MEMORANDA OF AUGUST.

The first day of this month, in the Romish Church, is generally called *St. Peter in the Fetter*, in commemoration of his imprisonment (Acts iv. 3). On this day the shepherds and herdsmen used to assemble round a temporary tower, built mostly of sods, but sometimes of stones, about four feet in diameter, and eight feet high. It was usually erected in the centre of their district,

and was probably designed only as a point of meeting to consult on rural affairs. These meetings were called *Concilia*. (See *Lambeth Day*, p. 518; and the *Minutes of the Scotch Presbyterian Society*, Scotland, Vol. I., p. 194—196.)

Before the Reformation, the 7th of August was dedicated to *Afra*, a female who suffered martyrdom for Christ's sake, having been converted by Narcissus, bishop of Jerusalem; and who also suffered on the same day. Our reformers devoted it to our Lord and Saviour.

The 10th of this month is dedicated to *St. Lawrence*, a native of Spain. He was appointed deacon to Pope Sextus about the year 259; and was also treasurer of the Church of Rome. This bishop was slain by the soldiers of the Emperor Valerian, because he refused to give up the treasures of the church. His death was of the most cruel imaginable; being laid on a gridiron, and broiled on a slow fire till life was extinct. The palace of the *Alcazar*, in Spain, is dedicated to him; and from the manner in which he suffered martyrdom it is built in the form of a *gridiron*. On the same day, in the year 1813, died *Mrs. Ann Burgess*, a female of great literary attainments, and authoress of several excellent religious works,—aged 49.

On the 12th, in 1821, *King George IV.* landed at Howth, in Ireland, on a visit to that part of his dominions, being the anniversary of his birth-day, in 1762. And on this day, 1822, died the *Marquis of Londonderry*, by his own hand, in the fifty-second year of his age, and in the midst of his celebrity. The cause is not known; but it is generally supposed that it was dementia, caused by too much mental exertion. [Dementia signifies madness, or losing one's reason.] In like manner, in a short interval of time, died two other distinguished senators and orators, Sir Samuel Romilly, and S. Whitbread, Esq.

The 15th is the festival called the *Assumption*. This is a festival in the Greek and Romish churches, in honour of the supposed miraculous ascension of the Virgin Mary into heaven.

The 15th of this month is also a noted day among the Japanese, being the "Children's Festival." In the evening of this day, the Japanese have a festival for their children, who assemble in the presence of the governor, and all the officers of state, to play, sing, dance, wrestle, and fence with sabres; and after the sports are over, they partake of a grand supper. Girls are not admitted, because the Japanese laws prohibit females from entering fortified places, and this exhibition takes place in the castle or fortress.

(To be continued.)

TO OUR READERS AND THE PUBLIC.

As the present state of Portugal excites so much interest throughout the country, we have been induced to devote more space to the description of Portugal, and its chief cities, than we originally intended; but, as nothing at the present moment can prove more interesting to our readers, we beg to call their attention to the following particulars:—

A Map of Portugal, together with a short general description, is given in No. XXXIX. In this number also is an excellent Map of Holland, together with a description; besides an article on Metamorphoses, and another on Night.

No. LXVII. contains a Map of Oporto and Villa Nova, and their environs; besides a general description of Portugal, as divided into provinces; together with a description of all the chief towns, rivers, &c. and for what they are noted; the Biography of Camogli, the Virgil of Portugal; an article on Chronology, with the continuation of the article on Optical Illusions, Antipathies, and Superstitions; and an Explanation of the Terms made use of in Astronomy.

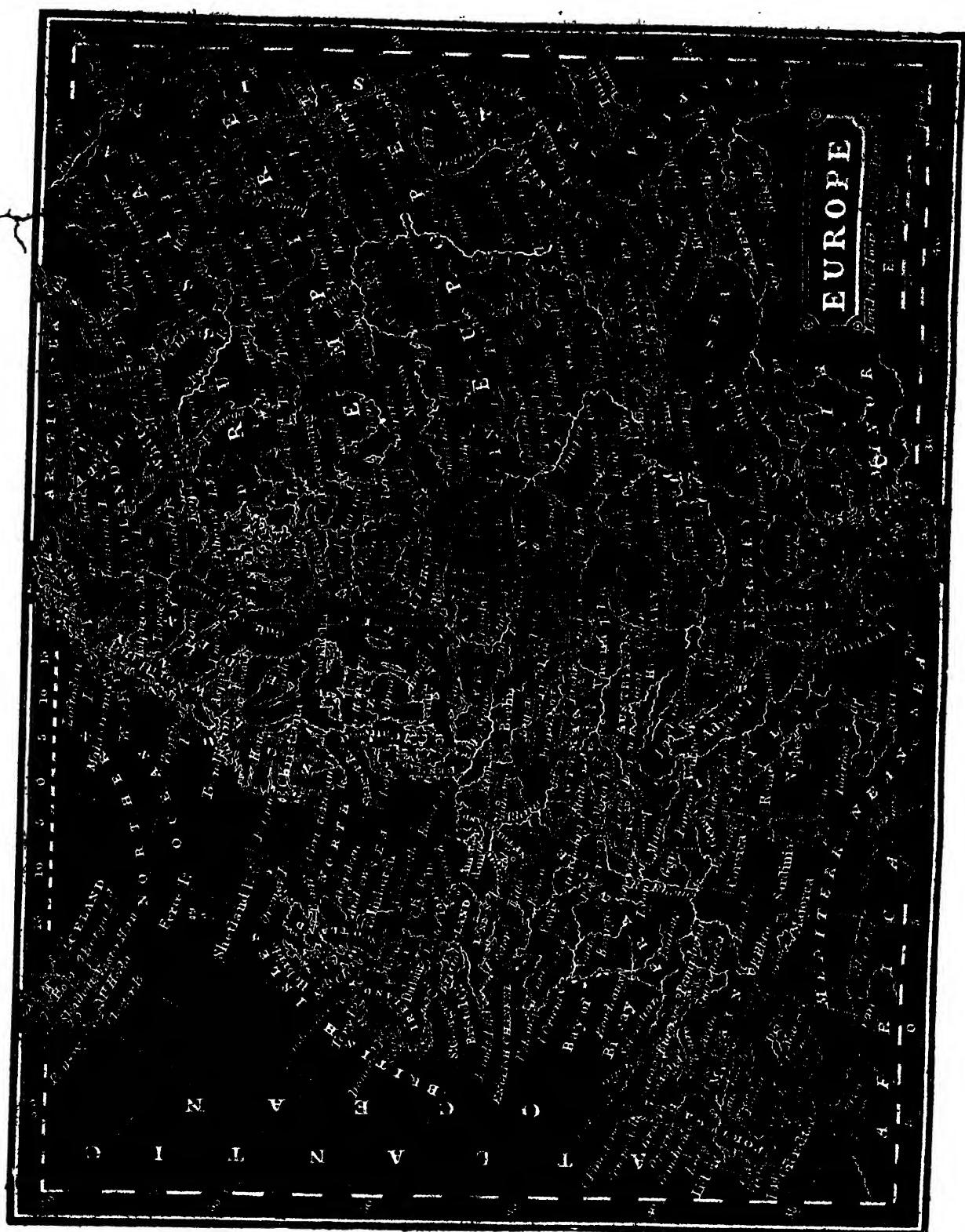
No. LXIX. contains a Map of Lisbon and its environs; together with a graphic sketch of Lisbon; besides a brief description of Portugal, Lisbon, and Oporto, as they are seen in a state of tranquillity and peace; together with an article on Portugal in its present state, &c.

No. LXX. will contain a Map of Europe; also a beautiful graphic sketch of Oporto, &c.; to which will be added, an explanation of the Plate in No. LXVIII.

No. IXXI.—GUIDE TO KNOWLEDGE.

PRICE
ONE PENNY.

EUROPE



EUROPE.

' Europe, between that zone, where endless winter reigns,
And that, where flaming heat consumes the plains;
Array'd in green, beneath resplendent skies,
The Queen of Arts, and Arms, fair Europe lies;
Around her northern and her western shores,
Throng'd with her fiery race, old Ocean roars;
The midland sea, where tide ne'er swell'd the waves,
Her richest lawns the southern border laves.
Against the rising morn, the northmost bound
The whirling *Tanais* parts from Asian ground,
As tumbling from the Scythian mountains cold,
Their crooked way the rapid waters hold
To dull *Maeotis' Lake*: her eastern line
More to the south, the Phrygian waves confine;
Those waves, which, black with toany navy, bore
The Grecian heroes to the Dardan shore.' *MICKLE.*

EUROPE is situated between the 36th and 72d degree of north latitude; both extremes of these degrees are included. Its length, from Cape St. Vincent, in Portugal, to the north-eastern boundary of Russia, is about 3,400 miles; and its breadth, from North Cape, in Lapland, to Cape Matapan, in Greece, is 2,390 miles. Thus, by giving the lengths and breadths of the other grand divisions of the world, we form a comparative view of the whole. ASIA extends in length about 1,700 miles, from west to east, and in breadth, from north to south, 4,380; AFRICA, from north to south, extends 4,500 miles, and its greatest breadth is 3, 500; AMERICA, from north to south, stretches nearly 9000 miles, and in its greatest width is 3,600.

Fabulous history informs us, that this portion of the globe received its name from Europa, daughter of Agenor, king of Phoenicia; but the real etymology of the name is unknown. *Bochart* is of opinion that the name of Europe is derived from the Phœnician word *Ur-appa*, by which the Phœnicians signified that this division of the world was the "land of the people with fair faces," in contradistinction to the "sallow and black complexion of the Africans." This derivation is generally considered the most probable.

In this grand division of the world, the human mind has made the greatest progress in its improvement; and the arts, whether of utility or ornament, with the sciences, both military and civil, have been carried to the highest degree of perfection. If we except the earliest ages of the world, it is in Europe we find the greatest variety of character, government, and manners; and from which we draw the greatest number of facts and memorials, either for our entertainment or instruction.

We will here take a view of what Europe was before the genius of DON HENRY, of Portugal, gave birth to the spirit of modern discovery. For several ages before this period, the feudal system had degenerated into the most absolute tyranny. The barons exercised the most despotic authority over their vassals, and every scheme of public utility was rendered impracticable by their continual petty wars with each other, and to which they led their dependents, as they would dogs to the chase. Unable to read or to write his own name, the chieftain was entirely possessed by the most romantic opinion of military glory, and the song of his domestic minstrel constituted his highest idea of fame. The classics slept on the shelves of the monasteries, their dark but happy asylum, while the life of the monks resembled that of the fattened beeves,* which load their tables. Real abilities were indeed possessed by a few individuals, but these were lost in the

most trifling subtleties† of a sophistry‡ which they dignified with the name of casuistical divinity. While every branch of philosophical or rational investigation was thus unpursued and unknown, "COMMERCE," incompatible in itself with the "Feudal system," was equally neglected and unimproved. When the mind is enlarged and enlightened by learning, commercial enterprise springs up; and this, in return, brings from every part of the world new acquisitions to philosophy and science. The birth of learning and commerce may be different, but their growth is mutual and dependent on each other. In the dark monkish ages, the intercourse of the learned was as much impeded and confined as that of the merchant. A few unwieldy vessels coasted the shores of Europe; and mendicant friars and ignorant pilgrims carried a miserable account of what was passing in the world from monastery to monastery. What doctor had last disputed on the peripatetic philosophy|| at some university, or what new heresy had last appeared, not only comprised the whole of their literary intelligence, but even this was delivered with little accuracy, and received with as little attention. While this thick cloud of mental darkness overspread all Europe, was DON HENRY of Portugal born,—born to set mankind free from the feudal system, and to give to the whole world every advantage, every light that can possibly be diffused by the intercourse of an unlimited commerce.

"For then from gloom emerg'd
The rising world of trade: the genius, then,
Of Navigation, that in hopeless sloth
Had slumber'd on the vast Atlantic deep
For idle ages, starting, heard at last
The Lusitanian prince, who, heav'n inspir'd
To love of useful glory, rous'd mankind,
And in unbounded commerce mixt the world."—THOMSON.

In contrast to the melancholy view of human nature, sunk in barbarism and benighted in ignorance, let the present state of Europe be impartially estimated. Yet, though the great increase of opulence and learning cannot be denied, there are some who assert, that virtue and happiness have as greatly declined; and the immense overflow of riches, which has been poured into this country from all parts of the world, has been pronounced big with destruction to the British empire. Every thing human, it is true, has its dark, as well as its bright side; but let these popular complaints be examined, and it will be found, that modern Europe, and the British empire in a particular manner, have received the greatest and most solid advantages from the present enlarged system of commerce. The magic of the old romance, which could make the most withered deformed bag appear as the most beautiful virgin, is every day verified in popular declamation. By those who thus declaim, ancient days are painted in the most amiable simplicity, and the modern in the most odious colours. Yet, what man of fortune in England now lives in that stupendous, gross luxury, which every day was exhibited in the gothic castles of the old

* Nice, fine; so refined or acute as hardly to be comprehended. It is sometimes written *subtilty*. When it signifies cunning, crafty, or deceitful artifice, it is generally written *subtlety*; but when it relates to thinness, or the quality of being much rarefied,—*subtile*.

† Sophistry, fallacious reasoning. Sophism is an argument, which carries the appearance of truth, but leads a person into error.

‡ CASUISTRY, belonging to cases of conscience, or practicable parts of ethics. CASUISTRY is the science employed about cases of conscience, or nice points in practical divinity, or ethics. A CASUIST is one who studies and resolves nice points in cases of conscience.

|| Taught by Aristotle. It was called peripatetic because his disciples used to dispute walking; from the Greek word *peripatetikos*.

Barons! Four or five hundred knights and esquires in the domestic retinue of a warlike Earl, were not uncommon; nor was the process of embroidery inferior to the profuse waste of the table—in both instances unequalled by all the modern extravagance of the present age. While the baron thus lived in all the wild glare of gothic luxury, agriculture was almost totally neglected; and his meaner vassals fared harder, and infinitely less comfortable, than the industrious labourers of England do at the present day; for where lands are uncultivated, the peasants, ill-lodged and poorly fed, pass their miserable days in sloth and filth, totally ignorant of every advantage, of every comfort, which nature lays at their feet. He who passes from the trading towns and cultured fields of England, to those remote villages of Scotland and Ireland which are of this description, is astonished at the comparative wretchedness of their destitute inhabitants; but few consider that these villages only exhibit a view of what Europe was, ere the spirit of comfort diffused the blessings which naturally flow from her improvements. Even in the days when our Henrys and Edwards plumed themselves with the trophies of France, how often has famine spread all her horrors over city and village? Our modern histories neglect this characteristic feature of former days; but the rude chronicles of those ages inform us, that three or four times, in almost every reign, was England thus visited. The failure of one crop was then severely felt, and two bad harvests together were almost insupportable. But commerce has now opened another scene—has armed government with the happiest power that can be exerted by the rulers of a nation—the power to prevent every extremity which may possibly arise from bad harvests, extremities which, in former ages, were esteemed more dreadful visitations of the wrath of heaven, than the pestilence itself. Such are the advantages of a commercial over an uncommercial nation.

REFLECTIONS ON EUROPE.

Every observer of nature and of mundane events, knows that they are constantly in a state of vicissitude; nothing is at stay; day and night, summer and winter, succeed each other. In one place, the sea encroaches on the land; in another, the land on the sea. Suddenly, a new island is formed, or an old one disappears; an extensive tract becomes dry land; or, by some convulsion of nature, a tract of land is swallowed up, and is covered by an extensive lake; a fruitful country is changed to a barren wilderness, and corn-fields wave where once all was barren sterility.

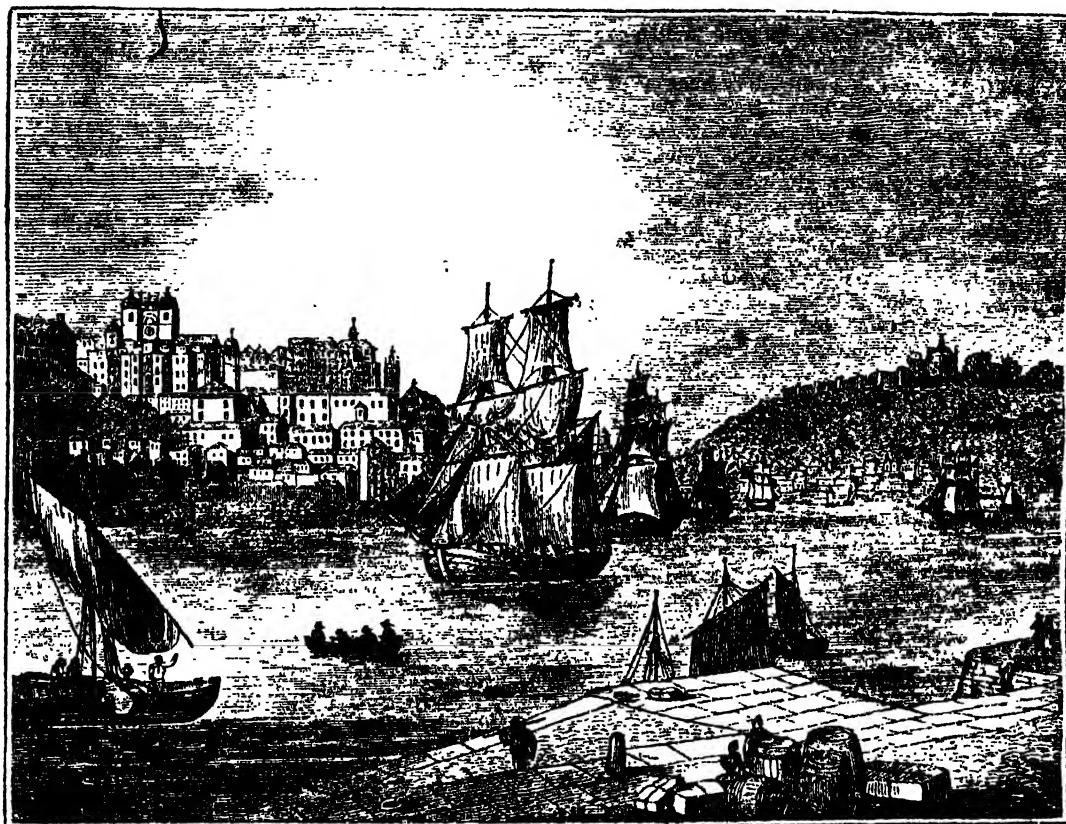
As it is in the *natural*, so it is in the *moral world*. Nations advance from barbarism to refinement; they gradually emerge from a state of savage rudeness, and proceed until they acquire a taste for, and practise, all the elegances of civilization; they cultivate the arts and sciences; they become renowned in arms, and make extensive conquests; they sink into luxury and effeminacy, become the prey of invaders; and, by degrees, resume their pristine barbarity; or, at least, lose all those noble qualities which once distinguished them above the other nations of the earth. The same vicissitudes take place in the commercial world. A nation is frugal, ingenuous, and industrious; it manufactures useful and elegant commodities, with which it supplies the rest of the world. It becomes wealthy and powerful.—Something occurs to divert this commerce into another channel; some rival succeeds in establishing a more favourable intercourse with foreign nations, and the prosperity of the country is lost for ever;—it becomes but the shadow of what it once was;

its palaces and splendid edifices remain, but grass grows in the streets of its cities; the population rapidly declines; and poverty and misery are seen where once all was opulence and splendour. Yet, perhaps, the sum of human refinement and enjoyment remains nearly the same in all ages, and under all changes. Without entering into an examination of the truth or fallacy of the opinion, that the savage enjoys as much real happiness as the most refined and exalted individual of the human race, it appears that civilization, and its attendant advantages, merely change their place,—if they are lost in one part of the world, they are found in another; and thus has the wise Disposer of events provided, that while men are lulled into supineness by a certainty of prosperity, whether they conduct themselves with wisdom and prudence or not; there is a certainty that their folly and imprudence will not deprive the world at large of these inestimable benefits, but merely transfer them to other hands.

These reflections owe their origin to a contemplation of the rise and fall of nations in the several great divisions of the world.

Our earliest records inform us, that Africa once shone the light of the earth; that from her Asia received those rays which afterwards kindled into such resplendent glories; from Asia, they passed to Europe; from Europe to America; and, reasoning by analogy, time will probably raise Australia to the highest pinnacle of grandeur, both as it respects its physical power and its moral excellences. Europe incontestably, at present, for literature, science, arts, and arms, is the most renowned portion of the globe.

When the Roman empire was at its highest pitch of grandeur, the greatest part of Europe was uncivilized; its inhabitants being, for the most part, barbarous hordes, who practised none of the arts which contribute so largely to the social comfort of the human race. War and hunting were their principal employments; glutony and intoxication their highest gratifications. Their religion was consistent with the rest of their economy. Their gods were ferocious monsters, and delighted in bloody rites and human sacrifices; and their ideas of future happiness were limited to the gross enjoyments of sense. When Christianity had made some progress, and the savage inhabitants of the north had overrun Italy, something like refinement was, by degrees, introduced; but it was not until the conquest of Constantinople by the Turks, A. D. 1453, and the consequent dispersion of its inhabitants, that Europe at large began to acquire that taste for the sciences which has at length raised her to the present height of glory. But it is to the discovery of the "art of printing" that Europe is chiefly indebted for that superiority over the rest of the world which she undoubtedly enjoys. However valuable the knowledge introduced among her nations, by the dispersion of the Greeks of Constantinople, its influence would have been comparatively but little felt had not the discovery of this wonderful art so greatly facilitated its communication, and rendered it of easy acquirement by the majority of mankind. Books no longer bore so exorbitant a price as to render them inaccessible to all but the wealthy; curiosity and a thirst for knowledge were awakened in the breasts of multitudes, and its partial gratification, instead of quenching, tended to increase its ardour. The happy consequences have been, that superstition and bigotry in religious matters have greatly decreased, and are rapidly vanishing: the "*Military Art*" has been so greatly improved as to increase the strength of those versed in it, and



VIEW OF OPORTO.

yet to lessen the horrors of war. COMMERCE,—by which a beneficial intercourse is kept up with all parts of the world, a better knowledge of countries and their inhabitants is acquired, and a reciprocal interchange of the productions of those countries is made to mutual advantage,—and the general principles on which it should be carried on, are better understood than in ancient times; when, from the limited extent of knowledge, men acted from narrow views and mistaken ideas.

To the valuable art of printing, likewise, we owe the ameliorations that have taken place in the different governments of Europe: the most arbitrary dare not commit such acts of despotism as once disgraced them; knowledge is so universally disseminated by the press, men's eyes have been so opened by it to their inalienable rights, that though, for the sake of order and tranquillity, they submit to some abuses until they can be gradually and safely removed, yet gross acts of tyranny cannot be perpetrated with impunity in any part of Europe, and its sovereigns are more or less aware, that to reign in the hearts of their subjects is more honourable and safe than to support their throne by armed bands and by oppressive acts.

Besides the advantages already mentioned, Europe enjoys some physical ones, which have contributed not a little to her present prosperity. Her numerous inland seas and navigable rivers, her compact form, and her territories not disjointed by vast and almost impassable deserts; the security her travellers enjoy from plunder and slaughter, from roving hordes of barbarians, like those

of Asia and Africa; and the admirable facilities of inland communication, which refinement has introduced, not only give her a decided superiority, but appear to warrant the expectation that her superiority will be more permanent than that of her predecessors.

Europe is exalted above the other parts of the world by possessing the "*true religion*," more than by any other advantages with which it may be favoured. Asia, undoubtedly, was honoured with the first annunciation of the "Gospel," but it is in Europe that it appears to have taken up its permanent abode, and is preached and practised in its greatest purity. It is in Europe that brotherly love and Christian charity are most eminently displayed; and although in some parts of North America freedom of religious opinion is almost unbounded, it is only among those whose inhabitants owe their origin to Europeans, and who have imbibed their liberal sentiments from their parent country. As the progress of knowledge is accelerated, those kingdoms of Europe which exercise some portion of intolerance will learn, that it is to God alone we are responsible for our religious opinions.

From Europe, likewise, has gone forth the sound of the gospel into the benighted regions of the earth. From Europe missionaries are sent, actuated by pious zeal and disinterested love for their fellow-creatures, to announce to them the glad tidings of the gospel dispensation, and to reclaim them from idolatry and vice. Europe, therefore, in every point of view, may well be considered as the "*mistress of the world*," the part of the globe the most favoured by the ALMIGHTY.

A BRIEF DESCRIPTION OF OPORTO.

(As seen in tranquillity and peace.)

It may be said that the finest, richest, and most interesting, because the most illustrious part of Portugal, is that between the rivers *Douro* and *Minho*, towards the north;—yet, in the immediate vicinity of Oporto, the traveller is not at first disposed to believe himself in that province, of which he may have heard so much, and which he may have so impatiently expected to enter; particularly when he contemplates the vast masses of granite mountains, the heaths and pine woods, the villages thinly scattered, and the sombre appearance of the detached houses. On advancing, however, within about twenty miles of that industrious city, he suddenly beholds one of the finest valleys of this so much boasted province: where small fields of rye and barley, and sometimes of wheat, are surrounded by various brooks; where every tree supports a vine, spreading over its branches, and not unfrequently reaching even to the summit of the loftiest oaks; while a cool refreshing shade everywhere presents itself, adorning a cultivated and highly populous country, in which every vale seems to realize the tales of fairy-land, and looks more charming from the contrast, in being enclosed between rocky and desert mountains. In these fertile vales of the *Douro* and *Minho*, the inquisitive traveller has many opportunities of observing the effects of the climate on society, and on manners in general. Here, at noon, whilst exposed to the potent sun-beams, every thing appears still and dead; about four, the peasantry begin to show themselves; and after sunset, the principal inhabitants are first seen abroad. But if quiescent during the day, yet the night seems occupied by a constant tumult; and the women, most lightly clad, seat themselves in their baleonies, in order to enjoy the mildness of the evening air, while beauty is enhanced by the romantic obscurity of their situation, and the surrounding scenery. The impression thus made upon the traveller, prepares him for the sublime prospect which bursts upon his view, when, on approaching Oporto, he suddenly beholds a fine city, with the innumerable churches and towers, situated as if hanging on a steep mountain between rocks which seem torn asunder, and surrounded by romantic mountains adorned with gardens, churches, and monasteries, interspersed among the pine woods, which reach almost to their summit. On looking down the vale, he behold a broad and rapid stream, covered with ships and vessels, and flowing amidst scenes of human industry, which occupy a spot that otherwise would seem as if destined by nature for the haunt of wild beasts alone; and, if he is a traveller of any feeling, he must be at once delighted and abashed with the prospect. Indeed, the whole of this scene is a striking proof of the superior effect of luxury, a spirit which clothes the desert with fertility, and raises a smile on the cheek of humble poverty; and here it is the handmaid of plenty, for on all sides he sees the marks of a better cultivation; and notwithstanding the barrenness of the mountains, yet the valleys are cultivated with maize, cole, and flax: the hills are covered with pine woods, and on all sides the luxuriant vines climb up the hedges and round the trees, giving splendour and animation to the scene. Much of all this is owing to the stimulus given to the natives, by the exertions of the "English Oporto Wine Company," added to the efforts of the British Factory in general; in fact, the English have not only given them a stimulus, but also set them an example, inasmuch as the co-constant

residence of what may be called a British colony, has made them more intimately acquainted with our manners and customs. On many accounts, this is, to a resident stranger, the most pleasant district of Portugal; and it is this neighbourhood which boasts the watering-place of *Caldas*, where much amusement may be enjoyed, and where, as at other places of like resort, he may soon become domesticated with some of the various parties which assemble here, though much must depend on the style and character of the general body of visitants: amongst whom there are some as fastidious as at any of our crowded summer resorts. A considerable portion of the society is formed of the nobility of the neighbouring provinces, who though not rich, are very numerous; they are very proud, and haughty, and even at this small place, have learned the sublime enjoyment of sacrificing their own comfort, and pleasures, in order to preserve those unsocial barriers on which they foolishly think their own consequence depends: hence, they must often exclude from their coteries the polish of literature, and the plain elegance of real worth, whilst the ignorant patrician, or titled sharper fills up the vacaney. Such is the character of Oporto when all is tranquil; but during its present convulsive state, it must, unhappily, as in all other cases of a similar nature, be in disorder and confusion.

OF THE PRIMEVAL INHABITANTS OF EUROPE.

The first inhabitants of Europe most undoubtedly came from Asia; but the history of the peopling of this quarter of the world is lost in obscurity. From the evidence of the best ancient writers, the original inhabitants of Europe were the descendants of *Gomer* and *Magog*, Japheth's eldest sons. Their descendants were afterwards denominated *Celtæ* and *Cimbri*: the former were the descendants of Gomer, the latter of Magog: the European *Sarmatae* were a branch of the peopleled several regions and countries of Europe by their colonies. The *Celtæ* are said to have been so called from their warlike character and disposition. Ancient authors have divided them into *Cimbri* and *Gael*. The *Cimbri* or *Cimmerii*, a corruption of *Gomerii*, possessed the northern regions, from the *Cimmerian Bosphorus* to the *Cimbrian Chersonese*,^f called northern *Celtæ*. The *Gael*, or *Celtæ Propriæ*, occupied the territories on the south, from the Rhine and the Alps. The *Fenni*, the first occupiers of Scandinavia, are supposed to be a tribe or branch of the *Celtæ*. They were supplanted by the *Seythæ* about 800 years B.C. They left their name in Finland. Of the *Lappi*, inhabiting the north, a diminutive race, no information has been obtained. The *Seythæ*, the *Goths* of the middle ages, an Asiatic nation, were the descendants of Magog, the second son of Japheth. Passing the Caucasian mountains, and emigrating west, they expelled the *Celtæ*, and settled in their country. They took possession of Thrace, Illyricum, and Greece, and established themselves also in Germany, Scandinavia, and Noricum, about 800 years before Christ.

* *Cimmerian* is so named from the name of *Cimmerium*, allied *Criæ*, and which gave the name of Criæ Tary, or Crimea, a whole peninsula; after having, under the name of *Cimmerium*, the capital of a famous people, who gave laws to the greatest part of Europe.

^f Now called the Straits of *Caffa* or *Theodosia*; or, according to later denomination, the Straits of *Zabache*. The word *Eosphorus* signifies a strait.

† The *Cimbrian Chersonese* is a peninsula of Jutland, in Denmark.

The **SARMATÆ**, the *Slavons* of the middle ages, another original race, were the descendants of **TEBAL**, a son of Japheth. They were but little distinguished by exigration or conquest. They were originally seated in the south-east part of Europe, and in the western part of Asia; but, being expelled by the *Scythaæ*, they took possession of Russia, Poland, and a district between the Save and the Danube.

The **IBERI**, another genera, are supposed to have been an African tribe, descended from **PUR**, the third son of Ham; who, in the earliest ages, invaded Spain, subdued the Celtic natives, and, in some parts, exterminated them.

From these races, under various denominations, the whole inhabitants of Europe are descended.

DIVISIONS OF EUROPE, &c.

EUROPE, except a small part of Lapland and Russia, is situated in the temperate zone. In general, it is better peopled and better cultivated than any other parts of the world, with the exception of China and Japan; it is fuller of cities, towns, and villages; and its buildings, in general, are far more solid and commodious than those of any other country, with the exception of the United States of America, which are all built upon the same plan as those of Europe. The Europeans also surpass all other countries, both in arts and arms, particularly in trade, navigation, and commerce.

Europe is divided into empires, kingdoms, and states. It comprises three empires, fourteen kingdoms, and several states.

The empires are those of Turkey, Austria, and Russia; the principal kingdoms are Great Britain, France, Spain, Portugal, Prussia, Sweden, Holland, Belgium, and Denmark; those of less note are Naples, Hanover, Wurtemburg, Bavaria, Saxony, and Sardinia.

Several other countries have the name of kingdoms, but are only parts of one monarchy; as the kingdoms of Bohemia and Hungary, which belong to Austria; the kingdom of Poland belonging to Russia; and the kingdoms of Scotland and Ireland, which belong to England.

The only two republics in Europe are those of Switzerland and the Ionian Isles; the latter is under the protection of Great Britain.

The kingdoms of Hanover, Saxony, Wurtenburg, and Bavaria, are all seated in Germany. Prussia comprises a part of Germany and a part of Poland; the Austrian dominions include a great part of Germany, Hungary, Bohemia, and the northern part of Italy. Part of the Italian state, is under the government of the Pope, hence called the Papedom, or states of the Church; the southern part of Italy, and the island of Sicily, constitute the kingdom of Naples. The kingdom of Sardinia comprises Genoa, Savoy, Piedmont, and the island of Sardinia, whence its name.

In Europe there are three general languages; namely, the **LATIN**, of which the Italian, the French, and the Spanish are dialects; the **TEUTONIC**, which is spoken, though differently, in Germany, Hungary, Denmark, Sweden, and Great Britain; and the **SLAVONIC**, which is the language (though greatly disguised) of Russia, Poland, Bohemia, and of Turkey in Europe. There are some of less extent, as the Greek, the Basque, the British (which is spoken in Wales,) the Irish, and the Lapponic.

Europe is also well watered with rivers. In Spain, there are the Ebro, the Tajo, or Tagus, the Guadalquivir, the Gondima, and the Douro; in France, the Garonne, the

Rhone, the Loire, and the Seine; in **GERMANY**, the Rhine, the Weser, the Elbe, the Oder, and the Danube; in **ITALY**, the Po and the Tiber; in **ENGLAND**, the Thames and the Severn; in **SCOTLAND**, the Tay; in **IRELAND**, the Shannon; in **RUSSIA**, the Don, the Dwina, the Wolga, and part of the Obi; in **POLAND**, the Vistula and the Dnieper.

The greatest cities in Europe are, London, Paris, Constantinople, Naples, St. Petersburg, Moscow, and Vienna.

OPTICAL ILLUSIONS, ANTIPATHIES, AND SUPERSTITIONS.

(Continued from page 528.)

Man too has his antipathies of the animal kind, and some of them are of a singular nature. The well-known tourist, Mr. Pennant, had such an extreme antipathy to a wig, that he was always peevish with any person that wore one, and has been known to snatch them off and throw them into the fire. It is related of him, that being at Chester, he had occasion to wait on the Mayor, who unluckily wore a full-bottomed powdered wig. This ornament of the head Pennant viewed with rising choler; at last, unable to endure it any longer, he seized the offensive object, and took to his heels, followed by the equally enraged and bald-pated mayor, while the wig waved in Pennant's hand, and the powder spread incense on the air, to the no small mirth of the populace, who used afterwards to call it the Mayor and Mr. Pennant's tour through Chester.

Children, and persons of delicate constitutions, are liable to certain antipathies, and particularly in the article of food; and therefore nothing can be more improper than to subject them to *cocripon* in the use of aliments. An instance occurred of this description in the case of a boy, who was of such a delicately nervous constitution, that he could not endure the sight of animal food, and the smell of it when dressed, (generally so grateful to hungry persons,) was to him most disagreeable; even the sight of a butcher was a most nauseous object, and the plate on which flesh meat had been placed, or the knife that had been used to cut it, was an object of his violent antipathy.

This boy, though not alarmed at the loss of his own blood, which twice happened to a great extent by accident, could not endure the shedding of the blood, even of a pig, and has been known to absent himself a whole day in the woods, when those animals were slain for the provision of his father's house; nor could he be convinced for many days, that the pollutions of the butcher's hands had been washed away from the knife and fork that he held in ed at his meals. Until this youth was full sixteen years of age, he had never eaten one ounce of animal food, nor could the most gnawing hunger have forced him to take it, a whole week's experiment having been made for that purpose, until sinking nature shewed that her antipathy was coeval with existence, and then incredulity was wholly overcome.

Antipathies, like the last mentioned, seem to form the demarcations in the economy of nature's animal creation. Some creatures are *carnivorous*,* some *granivorous*,† others *granivorous*,‡ and none, except man, actually *pro-miscerous*. Man, in fact, is the most voracious of all

* *Carnivore*.

feeding on flesh, or that which lives on flesh.

† *Granivore*.

eating or living upon grass.

‡ *Grase*.

feeding upon grain.

animals; but occasionally nature stamps him with a peculiarity, and qualifies his appetites to prefer her simple productions rather than to seek the blood of her animated creatures.

MENTAL ANTIPATHIES are such as spring up in the mind from certain affections, the result of thought, and of spiritual influence, more difficult to define, but not less potent than the former: natural antipathies are evidently the effect of physical organization; but mental antipathies arise from a source little, if at all, connected with the animal economy, constitution, or structure of the human frame.

A man who has an antipathy to vice, to dishonesty, fraud, and falsehood, has it not from any animal influence; there is no principle of corporeal gratification in this disposition,—it is an antipathy solely of the mind, with which the organs of sense have no connexion or affinity; nay, often on the contrary, are in opposition to, and conflict with, the principles on which such sanctified antipathies are established; for this cause, the Apostle Paul speaks of a war between his spiritual faculty and his natural senses, and laments the power of the latter, which “when he would do good, made evil present with him.”

The antipathy against wickedness, usurpation, and despotism, is also of this holy origin; it is a principle of divine nature, and can never be obliterated,—it does not depend on animal feeling, it is the imparted Spirit of God infused into the mind of man.

(To be continued.)

INTEREST OF MONEY.

INTEREST is a sum paid for the use of money for a certain time and rate. In the reign of Henry VIII. A.D. 1546, a law was made to fix the interest at 10 per cent.: this is the first legal interest known in England. In the reign of Elizabeth, legal interest was 12 per cent. During the Commonwealth, and the Protectorship of Cromwell, interest was reduced to 6 per cent. In the latter part of the reign of Queen Anne, in the year 1714, a law was made, that the interest should not exceed 5*l.* for the use of 100*l.* for one year, and so on for a greater or less sum, proportionable to the time proposed.

HISTORICAL MEMORANDA OF AUGUST.

On Aug. 15, 1822, George IV. visited Scotland, when he was enthusiastically received by our northern brethren. A complete account of this event may be found in Blackwood's Magazine for September, 1822. A poem written on this occasion by John Mayne, author of the “Siller Guin,” and some other pieces, is well worth reading, as exhibiting the native genius of Caledonian verse and ardent loyalty.

Queen Adelaide was born on the 13th of this month: the Duchess of Kent, on the 17th. On the 18th, 1783, a fiery meteor passed over England.

On the 19th, died Robert Bloomfield, the author of the “Farmer's Boy,” and some other poems, at the age of 57. He was a poet of nature, gifted by the Muses, but not benefited by education, his sphere of life being humble; his imagination was great and picturesque. On this day, anno Domini 14, died Caesar Augustus, the Roman emperor.

The first Book of Homilies was published by Cranmer on the 20th, 1547; his second book was published in 1563. These Homilies have been reprinted by the “Society for Promoting Christian Knowledge,” and also by the “Prayer Book and Homily Society.”

From 1648 to 1658.

On the 21st of this month, 1765, King William IV. was born, St. BARTHolemew.—The 24th of this month is dedicated to St. Bartholomew. The word Bartholomew means the son of Tolmai or Tolomeus, the name of a family among the Jews, mentioned by the celebrated historian, Josephus. He preached the Gospel in Armenia, and afterwards visited India. He is said to have been flayed alive by the orders of Astyages, King of Armenians.

The anniversary of this day is memorable for the cruel massacre of upwards of 70,000 Protestants in France, in 1572, by the Papists, and by the direction of their inhuman sovereign, CHARLES IX. In the Memoirs of the Duke of Sully, there is a very interesting narrative of his own escape from this horrible carnage.

“I was in bed, (says the Duke,) and awaked from sleep three hours before midnight by the sound of all the bells, and the confused cries of the populace. My governor, St. Julian, with my valet de chambre, went hastily out to see the cause; and I never afterwards heard more of these men; who, without doubt, were among the first that were sacrificed to public fury. I continued alone in my chamber, dressing myself, when in a few moments I saw my landlord enter, pale, and in the utmost consternation: he was of the reformed religion, and, having learned what the matter was, had consented to go to mass, to save his life and preserve his house from being pillaged. He came to persuade me to do the same, and to take me with him. I did not think proper to follow him, but resolved to try if I could gain the college of Burgundy, where I had studied; though the great distance between the house where I then was, and the village, made the attempt very dangerous. Having disguised myself in a scholar's gown, I put a large prayer-book under my arm, and went into the street. I was seized with insuperable horror, at the sight of the furious murderers, who, running from all parts, forced open the doors, and cried aloud, ‘Kill, kill, massacre the Huguenots.’† The blood which I saw shed before my eyes redoubled my terror. I fell into the midst of a body of guards; they stopped me, interrogated me, and were beginning to use me ill, when, happily for me, the book that I carried was perceived, and served me for a passport. Twice after this I fell into the same danger, from which I extricated myself with the same good fortune.

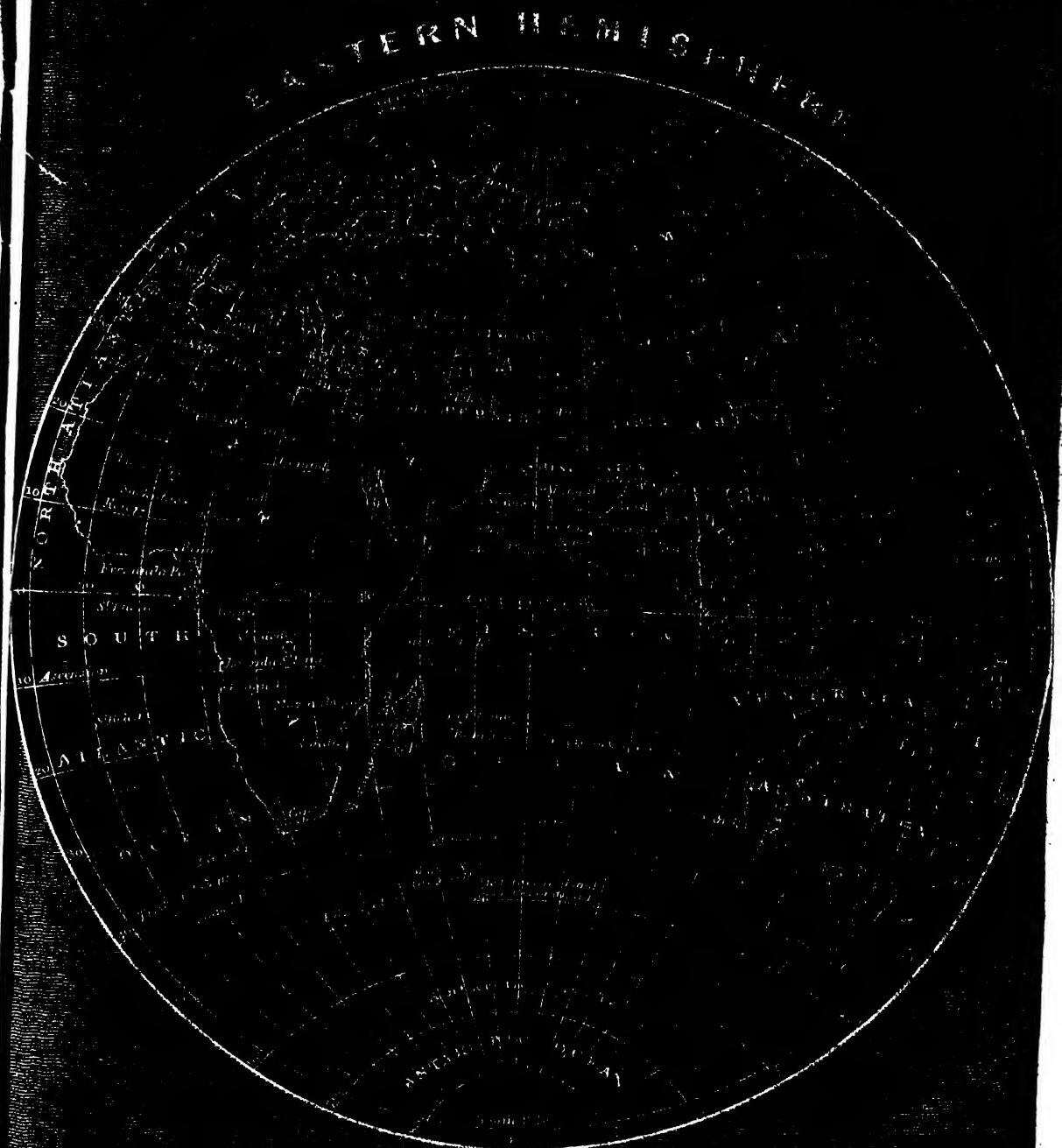
At last I arrived at the college of Burgundy, where a danger still greater than any I had yet met with awaited me. The porter having twice refused me entrance, I continued standing in the midst of the street, at the mercy of the ferocious murderers, whose numbers increased every moment, and who were evidently seeking for their prey; when it came into my mind to look for La Faye, the principal of the college, a good man, by whom I was tenderly beloved. The porter, prevailed upon by some small pieces of money which I put into his hand, admitted me; and my friend carried me to his apartment, where two inhuman priests, whom I heard mention ‘Sicilian Vespers,’ wanted to force me from him, that they might cut me in pieces; saying the order was, not to spare even infants at the breast. All the good man could do was to conduct me privately to a distant chamber, where he locked me up. Here I was confined three days, uncertain of my destiny; and saw no one but a servant of my friend, who came from time to time to bring me provisions.” The Duke, three days after, left his cell, and the murdering and pillaging was at an end. (Sully's Memoirs, Vol. I. p. 33. Ed. 1778.)

* It is not unworthy of remark, that Charles X. (who lately expatriated himself from France), actually sought and found hospitable reception among a people of the most strict protestant principles; namely, the presbyterians of Scotland.

† HUGUENOTS, a name given by way of contempt to the Protestants in France. The name had its rise in the year 1569, on the following occasion. At Tours, the place where they were thus first denominated, the people had a notion that an apparition, or hobgoblin, called king Hugon, strolled about the streets in the night-time; from whence, as those of the reformed religion met in the night to pray, &c., they called them Huguenots; that is, disciples of king Hugon. Goblin signifies an evil walking spirit; hobgoblin means the chief among the goblins.

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THE WORLD.

By the "WORLD," in its most extended sense, is meant "the whole universe of created beings;" but the term is most commonly applied to the "EARTH, and its inhabitants." It has many other shades of meaning, some of which will be noticed in the course of this Essay.

When we contemplate the vast UNIVERSE which the ALMIGHTY has created, and still maintains in existence with infinite ease, and with the most perfect order and regularity, our minds are overwhelmed in thought, and we are lost in the immensity of the object. When we call to mind that thousands and tens of thousands, yea, unknown multitudes of enormous globes, shining with their own light, and illuminating and warming millions of inferior spheres, are regularly disposed throughout the regions of infinite space; whilst around them those inferior spheres incessantly revolve with unerring accuracy, without interfering in the least with each other; the idea is too vast to be comprehended by a finite mind, and we can only wonder and adore.

If we take another view of this subject, and imagine, what there is every reason to believe is true, that every one of these innumerable globes is peopled with rational beings, and furnished with irrational animals, trees, plants, minerals, &c., or things analogous to them; that every creature is under the watchful superintendence of a gracious providence; "that even a sparrow cannot fall to the ground without the knowledge and permission of our heavenly FATHER;" that "the very hairs of our head are all numbered;" and that not even an insect, a blade of grass, nor an atom throughout this boundless UNIVERSE, can exist a moment without divine support,—with what deep humility ought we to prostrate ourselves at the feet of Him who is every where present, whose INFINITE WISDOM and ALMIGHTY POWER are as constantly exerted and indispensably required to cause the growth of the minutest leaf, or to maintain in existence a particle of dust, as to support and regulate the infinity of worlds which he has made!

If, in contemplating the WORLD, we confine our views to the GLOBE which we inhabit, we shall discover a boundless field for admiration and astonishment: though a mere point when compared to the aggregate of existing spheres, it is prodigiously vast when abstractedly considered, and presents inexhaustible sources of wonder and delight. Could the eye of man take in at one view the whole of its surface;—could it observe, as in one vast PANORAMA, its losty mountains, deep vallies, its wide-extended oceans and seas, its flaming volcanoes, its towering rocks, its immense forests, its verdant plains, its sterile sands, its fruitful fields,—what a grand and magnificent scene would it present! What exalted ideas would it inspire of our Great Creator, and what humbling views of ourselves!

But, if in addition to this the secret operations of NATURE were laid open to our observation, and we could clearly perceive the constant miracles that are incessantly in progress, from the circumference of the GLOBE to its centre, what wonders should we behold! It is impossible to glance at even the ten thousand millionth part of them; but the mention of a few will give some idea of the amazing scene. With what interest should we contemplate the action of the heart in animals, propelling the blood through a thousand arteries and veins, and receiving it back through its appointed channels! With what admiration should we behold the changes by which food is assimilated to the animal body, and converted into sub-

stances fitted to recruit the exhaustion of the different parts! How should we admire the processes by which plants draw their nourishment from the EARTH, and the wonderful manner in which their juices circulate, and are converted, some into wood, some into leaves, and others into flowers and fruits! How should we be gratified by watching the manner in which NATURE shapes the leaf and paints the flower; by what means she imparts to them their different qualities, their various scents and flavours; how, from the same soil, one plant draws that juice which produces wholesome and delicious nourishment, while another is loaded with nauseous and destructive poison!

Could we carry our researches still farther, and view with microscopic eye the infinite multitudes, the countless millions of organized and sentient beings that inhabit both the land and water, so exceedingly minute, that, in comparison, the mite is as bulky as the elephant, and observe the same processes going on within their bodies as in those of the largest animals; that these almost infinitely small creatures have their pains and pleasures, their desires and aversions, their quarrels and combats, like their brethren of a larger growth,—we should be lost in wonder and astonishment as much at this view of the minutiæ of CREATION as at the contemplation of the boundless UNIVERSE. And as our best TELESCOPES cannot discover all, nor perhaps the greatest portion of the vast GLOBES that roll in infinite space, neither can our best MICROSCOPES trace CREATION downwards throughout its retiring grades, there being, no doubt, objects in existence much too small ever to be seen by MAN even with these helps. But the minutest is known to God, and is the object of his providential care.

The ignorance of MAN occasions him to consider this WORLD as abounding with evils which have no natural existence. Most of those he does experience arise from his perversion of the gifts of PROVIDENCE, and from the absurdities which refinement has introduced. In the animal world; which is free from the control of man, we see little or no misery. Instinct teaches them in what gratifications to indulge, and what to shun; they obey its dictates, and are healthy and happy. It is true that many tribes prey on others; but as death is the lot of all, and the pang inflicted by a violent one is but momentary, this is but a little drawback to their felicity. It is to man alone that this world is a scene of trouble and sorrow, of vexations and disappointments, of pains and sickness, of an unhappy life, and an agonizing death. Many of the animals which he has domesticated endure much misery from his cruelty and improper management of them; but it is man alone that endures both bodily and mental anguish, the fruit of transgression, and a wide departure from the dictates of NATURE.

By the WORLD, we sometimes understand the human race, and sometimes that part of it only which is destitute of true religion; whose views are confined to the unsatisfactory and transient pursuits of this life. To retire from the WORLD, or into solitude, is by some considered meritorious; such persons forget that, while we are not to set our best affections on things below, we have duties to perform in SOCIETY which it is criminal to neglect; and that he who retires into solitude to shun temptation, is like the soldier who deserts his post in the day of battle.

Sometimes, the manners and customs of mankind are denominated the WORLD; thus, when a man has had much experience in life,—has been actively engaged in its scenes,—has suffered from its knavery and treachery, and

is thereby qualified to instruct others how to pass through it in safety, he is said "to know the World!" Unhappily it is difficult to attain this knowledge, without the mind being tainted, and the integrity somewhat impaired.

What a different scene may we hope that the World will one day present, to that which at present meets our eyes, when the progress of Knowledge shall have enlightened the minds of all mankind! When wars and lightnings shall cease;—when integrity and uprightness shall govern the actions of every individual;—when party distinctions, either in religion or politics, shall no longer exist, and passion and prejudice no longer bear sway! The day, we fear, is far distant; but there is reason to hope that it will arrive and bless mankind with peace.

EXPLANATION OF THE MAP OF THE WORLD, &c.

THE WORLD on which we live is represented by an artificial GLOBE or MAP; and the science so representing it is called GEOGRAPHY,—a term implying a description of the Earth.

This science is divided into general and particular. GENERAL GEOGRAPHY embraces a most extensive view, and regards the earth as a planet connected with the solar system, by which we investigate its peculiar properties, its figure, magnitude, and motions. PARTICULAR GEOGRAPHY describes the several regions of the Earth, chiefly as being divided among various nations, and improved by the art and industry of man.*

The World, called the Earth, is chiefly composed of two elements, *land* and *water*; which, according to their various combinations, form all that is visible on its surface, or invisible beneath. To explain the theory of its revolution, and variety of seasons, and to calculate the distances of different countries, geographers have adopted imaginary circles, for the better understanding of which it will be proper to inspect a terrestrial globe, or if a globe be not at hand, a map, such as the one annexed.†

Obs. When geographers had discovered the spherical figure, and diurnal rotation of the earth, they were soon led to a method of exhibiting its motions and various positions, by means of an artificial globe; and it still continues to afford a correct method of illustrating the principles of Geography. The artificial terrestrial globe is a representation of the Earth in its natural figure, exhibiting a general delineation of the land and sea, with the several circles, intended to mark out the relative situation of places on its surface. The imaginary axis about which the Earth revolves, is represented by the rod upon which the globe turns; and the points in which it terminates are termed the poles—one called the north, and the other the south pole.

The CIRCLES on the globe are usually divided into great and small. A great circle is that which divides the globe into two equal parts or hemispheres. A small circle is parallel to the former, but does not divide the globe into two equal parts.

Each of these circles is divided into 360 equal parts, called degrees; each degree is subdivided into 60 equal

* As the science of geography is so intimately connected with that of astronomy; and as it is impossible to attain a complete knowledge of the one, without a considerable knowledge of the other, the reader is requested, before he proceeds to enter upon a particular description of the different countries of the world, attentively to peruse the short view of astronomy which is given in the several parts of this work. See Nos. 3, 4, 5, 6, 10, 13, 14, 15, 16, 17, 19, 20, and 25.

† The map of the Western Hemisphere will be given in a future part.

parts, called minutes, or geographical miles; each minute is also subdivided into 60 equal parts, called seconds.

The great circles are the Equator, Meridian, Horizon, and Ecliptic; the small, the Tropics, and Polar circles.

The Equator, every part of which is equally distant from both the poles, divides the earth into the northern and southern hemispheres.

This circle is also called by astronomers, the Equinoctial, and among sailors, the Line, and when they sail over it, they are said to cross the Line.

The pole of the equator, which is in the northern hemisphere, is called the *arctic* or *north pole*; and the other, the *antarctic*, or *south pole*. The line which joins the poles, is called the axis of the earth, it being the line about which the earth performs its diurnal rotation.

The equator serves to calculate the longitude, or distance of places east or west of each other; and likewise latitude, or the distances north or south of this circle.

The MERIDIAN of a place is the circle which passes through that place and the poles of the earth, represented by the brazen, or universal meridian, and divides the globe into the eastern and western hemispheres. (See Map.) In other words, the meridians are great circles which pass through the poles, and cross the equator at right angles.

Obs.—As every place from east to west has its proper meridian, their number is indefinite; but on globes and maps, they are drawn only through every 10th or 15th degree of the Equator; and the English generally call that which passes through London the *first meridian*. The first meridian serves to calculate the longitude, east or west, according to the country where it is taken. For instance, in France, the distance of longitude is reckoned east or west of Paris. In England it is taken east or west of London. It is called the *first meridian*, in order to distinguish it from the other meridians, which intersect the equator at equal distances from the first meridian.

The LATITUDE of a place is its distance from the equator, and therefore cannot exceed 90 degrees. It is called *north* or *south*, according as the situation of the place is in the northern or southern hemisphere.

PARALLELS of latitude are less circles drawn on the terrestrial globe parallel to the equator, and are all equidistant. These, as well as the meridians, are indefinite, because every point of the meridian, from pole to pole, may be supposed to have a parallel of latitude passing through it. In globes and maps, generally, the parallels of latitude are drawn through every 10th degree of the meridian. Hence, it will be observed, there are nine extending to the north, including the equator, and nine to the south. And as their distance is 10 degrees, the whole distance from the equator to either the north or south pole must be 6,287 English miles.

The difference of latitude between any two places is an arc of the meridian included between the parallels of latitude, passing through those places. If one of the places be situated on the equator, the difference of latitude is equal to the latitude of the other place.

LONGITUDE is the distance of a place, east or west, from the first meridian, which, in British globes and maps, is that which passes through the royal observatory at Greenwich. Longitude never exceeds 180 degrees. The extent of a degree of longitude diminishes in advancing from the equator to the poles.

The difference of longitude between any two places is an arc of the equator, intercepted between the meridians of those places. If the first meridian pass through one of

the places, the difference of longitude is equal to the longitude of the other place. The distance between two places is the intercepted arc of a great circle passing through them.

The bearing of one place from another is determined by a kind of spiral, called a *rhomb-line*, drawn between them, so as to make equal angles with all the meridians it crosses. Its use is, in navigation, to shew what course a ship must steer to sail from one port or given place to another.

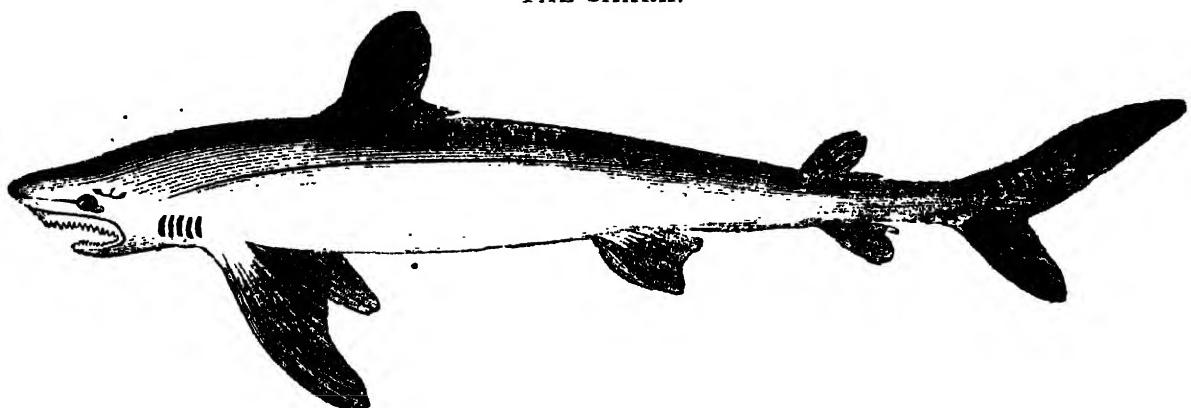
Obs. The great use of knowing the latitude and longitude of places, or ships at sea, is to be able to ascertain the exact point where the ship is at the moment of inquiry: for, by knowing the distance north or south of the equator, and east or west of the first meridian, you have the exact situation required.

The HORIZON of a place is a circle everywhere equidistant from that place, and divides the globe into the upper and lower hemispheres. When the circle has for its centre that of the earth, it is called the *rational horizon*; but when it has the eye of the spectator for its centre, it is termed the *sensible horizon*; or, in other words, the sensible horizon is that line which is the boundary of our sight between the earth and the sky.

The Poles of the horizon are the *Zenith* and *Nadir*. The point in the heavens immediately above the observer is called the *Zenith*; and the point in the heavens directly beneath him is the *Nadir*.

(To be continued.)

THE SHARK.



Of the SHARK there are two species, distinguished by their different colours, *blue* and *white*: and of all the inhabitants of the deep the shark is the fiercest and the most voracious.

The BLUE SHARK, a most terrible fish of prey, is usually from seven to eight feet in length, and of a proportionable thickness; the mouth is capacious, and furnished with large broad teeth. It is of an oblong form, and its belly is of a silver white. The mouth of the blue shark is similar to that of the white shark, but it is not furnished with so many teeth.

ÆLIAN says, "This species will permit the small brood, when in danger, to swim down its throat, and take shelter in its belly." The fact is confirmed by RONDELETIUS; and, as MR. PENNANT observes, it is no more incredible than that the young of the opossum* should seek an asylum in the ventral pouch of its parent,—a fact too well known to be contested. It is probable that this degree of affection is not peculiar to the blue shark, but common to the whole genus. The blue shark frequents many of our coasts, particularly those of Cornwall, during the pilchard season.

Though Rondeletius says he was an eye-witness to its fondness for human flesh, yet it is less destructive in our seas, owing perhaps to the coolness of the climate, which is known to abate the fierceness of some animals, and the venom of others.

The WHITE SHARK is much larger than the preceding,

and has a greater number of teeth. Of the white shark some have been known to weigh upwards of four thousand pounds. The head and eyes are large, the snout is long, and the mouth is enormously wide. The throat is also extremely wide, and capable of swallowing a man with the greatest ease: but its teeth are the most terrible; there are six rows, which are flat, triangular, exceedingly sharp at their edges, and finely serrated. Of these there are about 70 in each jaw; and from their sharpness they are terrible instruments of destruction; and their destructibility is said to increase in proportion as they grow older. Indeed all the other parts of this monster are almost equally terrible to behold; and its whole aspect is marked with malignity. It has large goggle eyes, which it turns with pleasure on every side, and hence can behold its prey as well behind as before. The tail is of a semi-lunar form, and from its vast strength it can strike with a most amazing force; on which account, the sailors cut it off with an axe immediately they get it on board. The colour of this animal is of a light grey; its skin is rough, hard, and prickly; and from it is made that substance which covers instrument cases, called shagreen.

The shark is as dreadful from its courage and activity, as from its appearance: no fish can swim faster; none are so constantly employed in swimming; it outstrips the swiftest ships, plays round them, and seems to gaze at the passengers without exhibiting the smallest symptom of an effort to proceed. The depredations this animal commits are frequent and formidable. In all hot climates it is the dread of the sailors, where it constantly attends the ships, in expectation of what may fall overboard. DR. GOLDSMITH relates, that, as a sailor was bathing in

* The opossum, a very singular animal, is about 15 inches long. The most singular part of this animal is that the skin of the belly of the female is loose, forming a kind of bag or pouch, with an aperture in it, at which, in time of danger, it takes in its young.

the Mediterranean, near Antibes, in 1744, while he was swimming about fifty yards from the ship, he perceived a monstrous fish approaching him; struck with terror at its voracious appearance, the poor man cried out to his companions in the vessel to take him on board; when they immediately threw him a rope, and while drawing him up the ship's side, the shark darted after him, and bit off one of his legs. Indeed, when a man has the misfortune to be pursued by any of these animals, he perishes without the slightest hope. "A master of a Guinea ship," says Mr. Pennant, "informed me, that a rage of suicide prevailed among his new-bought slaves, from a notion the unhappy creatures had, that after death they should be restored again to their families, friends, and country. To convince them, at least, that they should not reanimate their bodies, he ordered one of their *corpses* to be tied by the heels to a rope, and lowered it into the sea; and, though it was drawn up again as fast as the united force of the crew could be exerted, yet in that short space the sharks had devoured every part but the feet, which were secured at the end of the cord." So great is the rapacity of the shark, that it rejects nothing that has life; but human flesh appears to be its most favourite food; when once it has fed on that, it continually haunts those places where it expects a return of its prey.

THE SEASONS.

SPRING.

Of the four seasons of the year, three, *Spring*, *Summer*, and *Autumn*, shed their sweet influences alike on all: the sun shines, the flowers bloom, the birds sing, and the balmy zephyrs blow, both for poor and rich. The most exalted of mankind share these delights in common with the poorest peasant; and the man who has scarcely the necessities of life, basks on a sunny bank, and enjoys the delightful scenes around him with as much zest (and, perhaps, with fewer drawbacks on his pleasure,) as the lord of countless thousands.

Spring has been the theme of so many writers, both in prose and verse, that little can be said with any pretensions to novelty. Sunny skies, balmy breezes, springing flowers, and the music of the groves, have been described and sung even to satiety; we shall, therefore, in this essay, attempt to moralize on its various appearances, and to draw a parallel between it and the youth of man.

It frequently happens that *Spring* appears to commence early; sunny days and balmy gales are not unfrequent even in February: warmed by the genial influences, insects come abroad, birds begin to tune their voices, and rough winter seems to have taken its flight. But the experienced observer of nature is not to be deceived by these appearances: he does not throw off his winter dress; he does not begin to shear his flocks; nor to turn his cattle into the meadows: in a few short hours these flattering scenes vanish; again the snows descend, the keen winds blow, the birds become silent, and the insects retire to their secure retreats.

Just so it sometimes is with *Youth*. At an early age, we fancy we can perceive bright gleams of intellect. The child, by quickness of apprehension, fondness for books, and anxious inquiries after knowledge, seems to give promises of future eminence,—of rapid advance in the path of learning and wisdom. But too frequently this display of precocious* intellect, of early sagacity, of eager

desire for improvement, subsides into indifference; dullness gradually creeps over the mind, and he who, at his first entrance into life, gave reason to hope that at maturity he would shine as a star of the first magnitude, deceives his fond parents' hopes, and never rises even to mediocrity.

Even when *Spring* has so far advanced as no longer to border on the winter, it is extremely inconstant. Storms frequently deform its fair face; torrents of rain sometimes surprise the traveller, whom its beauties have enticed abroad; rude and boisterous winds oft take place of the balmy zephyrs, and commit great ravages among the tender vegetable tribes,† that are just springing into renovated existence; chilling frosts nip the opening buds, and destroy the hopes of a fruitful summer.—So in *Youth*, the season of gaiety and good humour, of cheerfulness and freedom from anxious cares, turbulent passions are easily roused, evil propensities are feebly resisted, and the fair seeds of virtue are prevented from flourishing with that luxuriance which parental fondness anticipated.

Yet, with all these imperfections, *Spring* is a lovely season; it affords a great gratification to view nature reviving in all her youthful loveliness; and the pleasure is perhaps heightened by the occasional glooms which storms and tempests produce.—So even the very waywardness of *Youth* has something engaging in it; and, if properly managed, may be rendered not only harmless, but, in some respects, advantageous: for, as the sun shines brighter, the flowers smell sweeter, and the herbage of the meadow assumes a greener hue after a thunder-storm; so, after the indulgence of any impetuous feeling, ingenuous youth seems more interesting after being brought to reason and reflection, to acknowledge its errors, and to sincerely repent of them, than when it maintained the even tenor of its way, undisturbed by anger, unruffled by passion.

Let us not be understood by this to advocate the cause of those who indulge in impetuous sallies. But, as it is not to be supposed that young persons have, as yet, had sufficient time, or acquired sufficient strength of mind, to subdue their feelings, and restrain their emotions, the undisguised display of them gives a clue to their character, and affords an opportunity of advising and reproofing, which, otherwise, might not so conveniently offer. We are well aware that evil passions exist in the hearts of all by nature; and it is their occasionally getting the mastery, that affords parents and preceptors the opportunity of attempting to root them out. This can be most easily done in early youth; as weeds can be most effectually eradicated from a field or garden, if they shew themselves before the crop has made any great advance. Evil habits, if suffered to continue long unchecked, contract a stubbornness which nothing can eventually overcome.

Although *Spring* is an uncertain and variable season, sometimes bright and shining, at others gloomy and dull; sometimes cherishing its productions with a genial warmth, and at others chilling them with biting winds and nipping frosts; yet, by proper care, many of the evils arising from these variations can be avoided. The skilful gardener watches the changes of the atmosphere; he anticipates, by infallible signs, the coming storm; he exposes his infant progeny‡ to the warm rays of an unclouded sun;

* Every thing that has growth without sensation or power of self-motion is vegetable; the "vegetable tribes" therefore imply, or comprise, all kinds and species of plants.

† Here used figuratively (of vegetables), young sprouts, young plants: (of human beings), offspring, race, generation.

he defends them by glasses, mats, and other methods, from cold and storms; by this careful attention they flourish and grow strong, until at length they acquire sufficient firmness to endure all the changes of the sky without injury.

So Youth, variable as the *Spring*, and subject to a thousand caprices, which, if unattended to by a wise and experienced preceptor, would for ever blight the hopes of those who are interested in their welfare, are guarded from the ill consequences of these irregularities by his careful and vigilant interference: with consummate skill he restrains impetuosity, and stimulates indolence; with patient assiduity he endeavours to eradicate the evil propensities of his pupil's mind, and to inspire good principles, which are the foundation of good actions. He warms them into exertion, by pointing out the beauties and delights to be enjoyed in the path of *wisdom* and *virtue*; and he guards against the chilling influence of difficulties, by judiciously removing them as much as possible. Is any individual among his tender charge drooping and dejected, from an idea of his incompetence to perform the tasks allotted, he, like the careful guardian, affords him aid and support, until confidence in his powers is acquired, and he no longer needs any other prop.

SUMMER.

Man likewise, in the *Summer* of his years, goes forth into the world to practise those lessons which he has been taught in his *Youth*, to flourish and grow in the wide field of *Society*, and to acquire that rich harvest which may reasonably be expected from the seeds so carefully and seasonably sown. But there are a thousand casualties, and a thousand dangers which still threaten to defeat his hopes. His passions are still strong; his judgment is immature; if he rely on himself alone, if he reject the counsel and the advice of the more experienced in the ways of life, he will be like a field of corn overrun with weeds, which disappoints the hopes of the husbandman, and produces little more than straw. As corn in summer is cut and stored for future use, so, in the prime of his years, ought *Man* to lay up for the "*Winter of age*." He ought carefully to guard against the neglect of business, expensive pleasures, and hazardous speculations, as the husbandman maintains his fences to prevent the ravages of cattle among his ripening grain; for the devastation occasioned in a field of corn, by the irruption of the most destructive animals, cannot be more effectual than that caused in the prospects of a young man by the indulgence of the vices named above. The length of the days in *Summer* admonishes that, in this, the prime of life, when the faculties are in full vigour, and youthful acquirements are fresh in his recollection, *Man* ought to be vigorous and active in all his lawful pursuits, his imperative duties. The indulgence of sloth enervates the faculties both of mind and body; it not only wastes some of the most precious hours, but renders him unfit to improve those that remain. How must the bright beams of the morning sun, the lively carol of the soaring lark, the song of the thrush and of the blackbird, reprove his indolence and folly, who wastes the most advantageous hours for health and business in dozing on his pillow, and forcing on himself more sleep than nature requires. How do his listless feelings, his reluctance to exertion, his want of appetite, his pale and wan countenance, when he has found sufficient resolution to leave his bed, tell him plainly that he is pursuing a plan which will lead to

the ruin both of his health, his circumstances, and his mental powers!

Sloth is not only personally injurious, but it extends its baneful influence to all around. A slothful master makes indolent and careless servants. How can a man who neglects his own most important interests, expect that hirelings will be diligent, industrious, and careful in his service? Conscious that the eye which ought to watch over them, to approve their well-doing, and reprove their neglect, is closed in slumber, their energies relax; they are no longer stimulated to an active and punctual discharge of their duty, by the hope of commendation, nor deterred from negligence and carelessness by the fear of reproof; they receive no lessons of diligence from example; no cheering smiles to lighten their toils, and sweeten their labour. Well is it if such neglect, such powerful inducements, do not tempt them to be dishonest; not satisfied with negatively wronging their indolent master, but appropriating to their own use those goods of which he takes so little care. Nor do the evils of sloth stop here: if the indolent man be the father of a family, how pernicious are the effects of this evil propensity! How widely do they extend! Who can say where they will stop? They are likely to extend to the latest posterity. The consequences are not merely negative; his children do not merely copy his example, and indulge in the same haleful* habits; they are not only deprived of that paternal instruction, and that pattern of industry and care, which he ought to set before their eyes; but their minds, thus empty of good, are soon stored with evil ideas and principles; they associate with such as impart to them vulgar manners and illiberal sentiments: they become unfit companions for the wise and good; grow up to be their parents' shame and disgrace; and, finally, lose that rank in society, which, under more favourable auspices, they might have maintained with credit and honour.

How different is the fate of him who diligently improves the "*Summer of his age*!" Without being actuated by sordid motives, he feels it is his duty to make the most of those talents committed to his care. Is he a man of easy fortune, of education, and of taste? He sits not down in indolent enjoyment of the blessings bestowed on him, but is actively engaged in extending them to such of his fellow-creatures as are within the sphere of his influence. He provides employment for the industrious poor; he communicates instruction to the ignorant; he devotes a proper time to study, to the cultivation of his mind, and the laying in stores of valuable knowledge; and varies his pursuits so as to keep both his mental and bodily powers in full vigour, by improving the beauties of nature, executing works of taste, and embellishing his domain by every means that a sound judgment and elegant fancy can devise. In his family, he is not only the careful preceptor, but the bright example; his children learn wisdom from his lips, and diligence from his practice; they are taught, that *life* is too short, and *knowledge* too extensive, to allow any time to be lost in the acquisition of it. Is he a man of business, he assents to the truth of Solomon's observation, "*The hand of the diligent maketh rich*"; and to that of Phaedrus, "*The master is most clear-sighted in his own affairs*." In consequence, he leaves his bed soon after dawn; observes that all his servants are punctual in their attendance; that every thing is arranged in proper order, and that every part of their

* Full of mischief, destructive, poisonous; also full of misery or grief, sorrowful, woeful, sad.

duty is discharged in the most correct and skilful manner. He is attentive and polite to those who have business with him; and, at the close of the day, is careful to see that every thing is again in order, that his accounts are correct, and that every danger from fire, from theft, or accidents of any kind, is guarded against, as far as human precautions can avail. These duties performed, he can return to the bosom of his family, with a cheerful heart, there to receive the best reward he can hope for on earth, the smiles of an affectionate partner, the caresses of his well-governed children, and the approbation of his own conscience.

The "Summer of life" thus employed seldom fails to produce a rich Autumn and a serene Winter. But should Providence see fit to afflict the latter days of such a man, either with sickness or poverty, he is sure of the sympathy of his fellow-creatures, and the blessings of his God.

THE METROPOLIS.

The importance of London, estimated by the amount of its population, compared with the other great towns of Great Britain :

City of London	122,799	Glasgow	202,426
No. of Westminster	202,894	Edinburgh	162,156
Borough of Southwark	134,117	Manchester	187,922
Do. of Lambeth	154,613	Liverpool	105,175
Do. of Finsbury	224,839	Birmingham	146,966
Do. of Marylebone	240,294	Leeds	123,393
Do. of Tower Hamlets	379,864	Bristol	104,338
Total..	1,439,417	Sheffield	91,692
		Wolverhampton	67,514
		Knaresborough	62,053
		Norwich	61,110
		Aberdeen	58,019
		Total..	1,431,884

From this statement it appears that the metropolis is superior in population to the 12 greatest towns in England and Scotland.

The 56 boroughs totally disfranchised by the Reform Bill, contained a population (exclusive of Bernalston, from which place no return has been obtained,) of 71,961, being scarcely more than a fifth part of the new metropolitan borough of the Tower Hamlets.

APOPHTHEGMS.

MARK ANTHONY, after the battle of Actium, challenged Augustus, who took no further notice of the insult than by sending back this answer : " If Anthony is weary of his life, there are other ways of dispatch ; I shall not trouble myself to be his executioner."

THE richest endowments of the mind are temperance, prudence, and fortitude ; prudence is an universal virtue, which enters into the composition of all the rest, and where that is not present, fortitude loses its name and nature.

PHILOSOPHY and RELIGION show themselves in no instance so much as in the preserving our minds firm and steady.

HISTORICAL MEMORANDA OF AUGUST.

On the 25th of this month in 1822, died Sir W. Herschel, Knight, LL.D., F.R.S., aged 83. He was born at Hannover, Nov. 13th, 1738. He came to England in 1757. He discovered the planet that goes by his name, or more commonly *Uranus*, on the 13th of March, in 1781. He himself named it the Georgium Sidus, in honour of his late Majesty, George III. He greatly improved the Telescope, and completed one in 1787, of

very superior power, and large dimensions. Astronomy has been considerably benefitted by his inventions and discoveries. He was interred at Hanover, Aug. 27th.

ST. AUGUSTINE.—On the 29th August, A.D. 354, was founded a town of Numidia in Africa. A.D. 356, he was sent almost to the study of Gothic literature, and became a student of philosophy, under the charge, next at Rome, of St. Ambrose of Milan. His father was a Christian, and his mother a woman of exemplary virtue. His father sent him to Carthage in 363, and with great reputation, but still continued his heretical course of life. He carried this situation to Africa, as recommended to him, where he taught rhetoric with great applause. He was appointed professor of rhetoric at Milan, in 383. Here the opinions of St. Ambrose effected a conversion, and in consequence he diligently studied theology, renounced his heretical notions, and was baptized in 387. In the following year he returned to Africa, and three years after was chosen bishop of Hippo Regius.* He was one of the most celebrated of all the Fathers, and his works are very numerous; the best edition is that of Paris, in 10 vols. folio, 1679, and 1690. He died in 430, at the age of 77. The reader will take care not to confound the above-named Augustine with St. Augustin or Austin, the first Archbishop of Canterbury, a Roman monk, who was sent to this country by Gregory I., with forty others, to convert the inhabitants of this island; about the year 596. St. Austin died at Canterbury in 604. His life is recorded in British history.

On the 31st of this month, in 1824, died WILLIAM JEPTON, a gardener, at the age of 108, who enjoyed through life an uninterrupted course of good health and buoyancy of spirits, an instance, among many others, of how great effect cheerfulness of disposition is in the promotion of longevity.

In the month of August in 1824, a record was made of the pomp and splendour of CARDINAL WOLSEY, prime minister to HENRY VIII., and Lord High Chancellor of England. This upstart individual is thus described :—

"The Cardinal rose early, heard two masses, and about 8 o'clock left his private chamber, dressed in the red robes of a cardinal; his upper garment being of scarlet; or else of fine crimson, taffata, or satin, with a black velvet tippet of sables about his neck, and holding in his hand an orange, deprived of its internal substance, and filled with a piece of sponge saturated with vinegar, and other confections against pestilential air, which he most commonly held to his nose, when he came to the presses, or was pestered with suitors. The great Seal of England, and the cardinal's hat were borne before him by some lord or gentleman of worship and right solemnity; and as soon as he entered the presence chamber, the two tall priests, with two tall crosses, were ready to attend upon him, with gentlemen ushers going before him bareheaded, and crying, ' On, masters, make way for my Lord ; ' the crowd thus called up, consisted not only of suitors, but often of peers of the realm ! In this state, the proud Cardinal proceeded down his hall, with a sergeant-at-arms before him, carrying a large silver mace, and two gentlemen, each bearing a large plate of silver. On his arrival at the gate or hall door, he found his mule ready, covered with crimson velvet trappings.

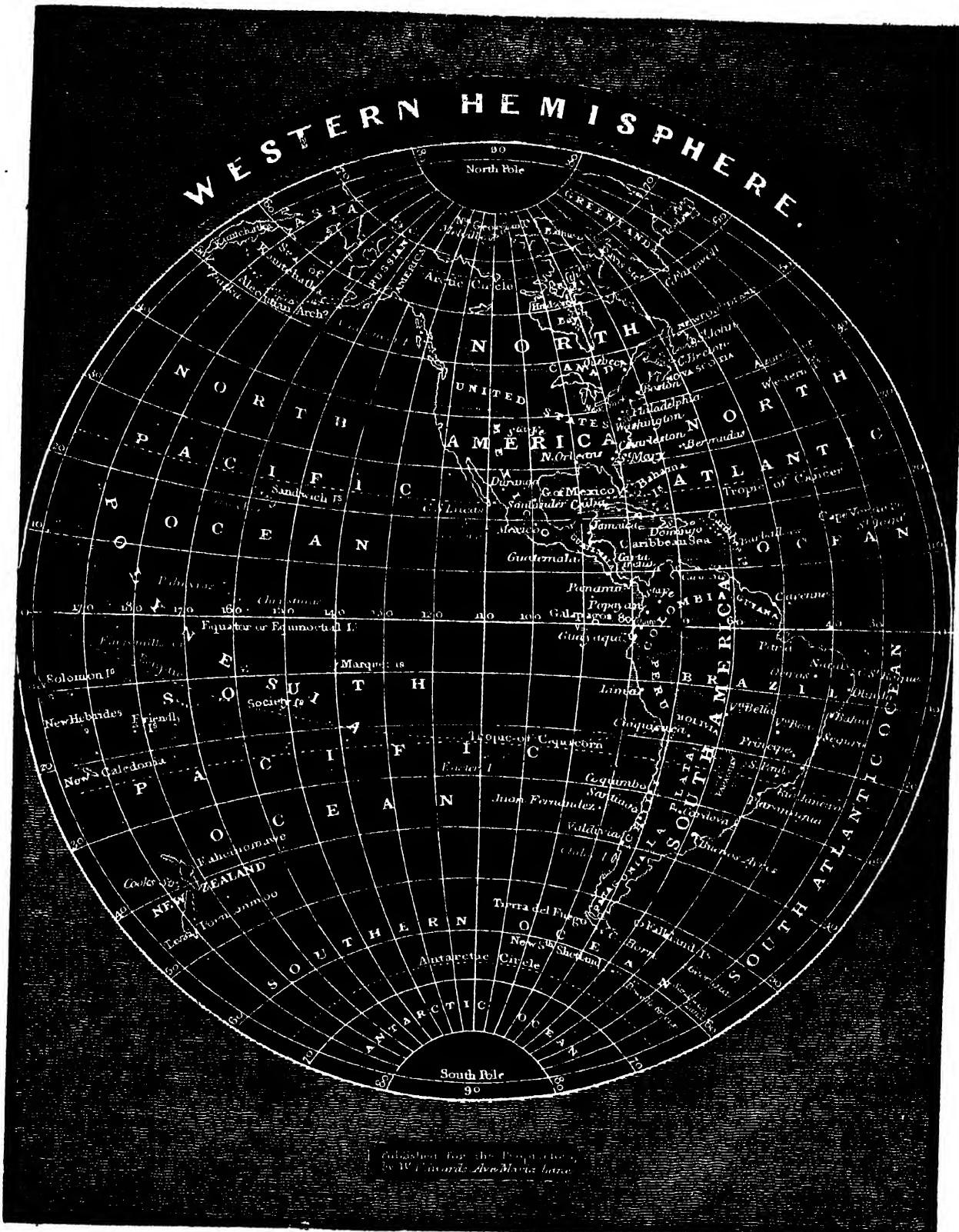
"When mounted, his attendants consisted of his two cross-bearers, and his two pillar-bearers, dressed in fine scarlet, and mounted on great horses, caparisoned in like colour, and four men on foot, with each a pole-axe in his hand, and a long train of gentry, who came to swell his triumph as he proceeded to the Court of Chancery, where he generally sat until 11 o'clock, to hear suits and determine causes."—*Wolsey and his Times*, by E. Howard, Esq.

* Strabo, Mela, and Livy. It was so called because it was in the dominions of the kings of Numidia, to distinguish it from Hippo Diarrhytus, which was first in the power of the Carthaginians, and then of the Romans, but never under kings. Hippo was a strong place, situated on the Mediterranean, at about 218 miles to the west of Carthage.—*Antoine*. It is now called Bona, a port town of Algiers.

No. LXXII.

GUIDE TO KNOWLEDGE.

PRICES
ONE PENNY



EXPLANATION OF THE MAP OF THE WORLD.

(Continued from page 549.)

The ECLIPSTIC is that circle which cuts the equator obliquely, and marks the apparent path of the Sun through the heavens. This circle, besides its division into 360° in common with all other circles, is also divided into twelve equal parts called signs; each of which contains 30° . The signs are, *Aries, Taurus, Gemini, Cancer, Leo, Virgo, Libra, Scorpio, Sagittarius, Capricornus, Aquarius, and Pisces.*

The TROPICS are two circles parallel to the equator, and distant from it $23^{\circ} 28'$; that in the northern hemisphere is called the *Tropic of Cancer*; and that in the southern, the *Tropic of Capricorn*.

The tropics are the highest and lowest points of the ecliptic. The Tropic of Cancer shews the sun's greatest declination towards the north; and the Tropic of Capricorn shews his greatest declination towards the south.

The POLAR CIRCLES are also parallel to the equator, and are situated $23^{\circ} 28'$ from the poles; that on the north side of the equator is called the *Arctic circle*; and that on the south side, the *Antarctic circle*.

The tropics and polar circles divide the earth into five parts, termed ZONES; which are, one torrid, two temperate, and two frigid.

The TORRID ZONE is that part of the earth which lies between the tropics; its inhabitants are called *Amphiscii*, because their shadows fall sometimes towards the north, and at other times towards the south, according to the sun's declination. This zone is 47° in breadth.

The TEMPERATE ZONES lie between the tropics and polar circles; each 43° in breadth; and the FRIGID ZONES are situated within the polar circles.

The inhabitants of the temperate zones are called *Heteroscii*, because their shadows at noon fall the same way throughout the year; that is, theirs in the north temperate zone fall towards the north pole; and theirs in the south temperate zone fall towards the south pole. The inhabitants of the frigid zones are called *Periscii*, because their shadows always turn round them, according to the apparent motion of the sun.

CLIMATES are more minute divisions of the globe than zones, and lie between parallels determined by the length of the longest days. Those between the equator and the polar circles, called *Hour Climates*, are reckoned by the increase of half an hour in the length of the longest day; and those within the polar circles, denominated *Monthly Climates*, are determined by the increase of a month, in the continuance of the longest day. Or, in other words, the climates are determined by the length of the longest day at their respective limits; the difference of half an hour in the length of the longest day producing a new climate. And because they commence at the equator, the longest day at the beginning of the first climate is equal to 12 hours, and at its end, $12\frac{1}{2}$; the second, which begins where the first ends, namely, at $12\frac{1}{2}$ hours, ends at 13 hours; and so on for the rest, as far as the polar circles, at which the longest day is 24 hours. Beyond the polar circles the climates include a sufficient space to occasion the difference of one month in the time of the sun's appearing without setting, or in what may be called the longest day at places in the frigid zones. Hence, it will be observed, that climates vary greatly in their breadth.

The following table shews the length of the longest day at the end of each hour climate, and the latitudes of the limits of the climates.

Climate.	Longest Day.	Latitude.
1 ..	12 hours 30 minutes.	$8^{\circ} 34'$
2 ..	13 — 0	$16^{\circ} 44'$
3 ..	13 — 30	$24^{\circ} 12'$
4 ..	14 — 0	$30^{\circ} 40'$
5 ..	14 — 30	$36^{\circ} 31'$
6 ..	15 — 0	$41^{\circ} 24'$
7 ..	15 — 30	$45^{\circ} 32'$
8 ..	16 — 0	$49^{\circ} 2'$
9 ..	16 — 30	$52^{\circ} 0'$
10 ..	17 — 0	$54^{\circ} 31'$
11 ..	17 — 30	$56^{\circ} 38'$
12 ..	18 — 0	$58^{\circ} 27'$
13 ..	18 — 30	$60^{\circ} 0'$
14 ..	19 — 0	$61^{\circ} 19'$
15 ..	19 — 30	$62^{\circ} 26'$
16 ..	20 — 0	$63^{\circ} 23'$
17 ..	20 — 30	$64^{\circ} 10'$
18 ..	21 — 0	$64^{\circ} 50'$
19 ..	21 — 30	$65^{\circ} 22'$
20 ..	22 — 0	$65^{\circ} 45'$
21 ..	— 30	$66^{\circ} 7'$
22 ..	23 — 0	$66^{\circ} 21'$
23 ..	23 — 30	$66^{\circ} 29'$
24 ..	— 0	$66^{\circ} 32'$

It appears from this table, that if 12 hours be taken from the longest day in any latitude, and the remainder doubled, it will give the number of the climate; and on the contrary, if 12 hours be added to half the number of a climate, the sum will be equal to the length of the longest day. Thus, the longest day at *Bergen*, in Norway, is 19 hours; therefore, $19 - 12 = 7$, and $7 \times 2 = 14$, the climate. Again, *Cairo* is in the fourth climate; and $12 + 2 = 14$,† the length of the longest day in hours. The longest day in any given place is found in the second column, against its latitude in the third. Thus the longest day at *Paris* is 16 hours nearly.

The intersections of the ecliptic and equator are called the *equinoctial points*, and when the sun is in these points, the days and nights are equal throughout the world.

The four cardinal points are *north, east, west, and south*. The top of the map is always *north*, the right hand *east*, the left hand *west*, and the bottom *south*.

Though the representation of the earth by a globe was both simple and accurate, yet it was found in many respects deficient; for when very large, it was incommodious, and when small, the places necessary to be represented, were either too much crowded, or altogether omitted. To remedy these defects, geographers contrived to represent the earth's surface on a plane, which may be exhibited on a greater or less scale, according to circumstances. Such a representation is denominated a *planisphere*, or *map*; and maps are either general or particular. A general map, or planisphere, comprehends the whole surface of the earth; and consists of two circles, representing the *Eastern* and *Western Hemispheres*, in which are delineated the principal parts of land and water, and the circles of the globe. A particular map represents only a portion of the earth's surface, in which are laid down the different seas, islands, countries, &c., connected with it. On each side is a part of the meridian, divided into degrees of latitude; and at the top and bottom are parallels, divided into degrees of longitude.

* This mark (°) is the sign of a degree. This ('') of a minute. This (") of a second.

† This sign + signifies plus or more; this × of multiplication: this — minus or less; this == equal to.

OF THE DIVISIONS OF THE WORLD.

The division of the Earth's surface is *natural* or *political*.

The natural divisions of the Earth's surface are *land* and *water*; about one-third is land, and two-thirds water.

The *Land* is divided into *continents*, *islands*, *peninsulas*, *isthmuses*, *promontories*, and *capes*.

A *Continent* is an extensive tract of land, containing several countries, and not separated by any water. There are two continents, the *Eastern* and the *Western*, or the *Old* and *New*; the former comprehends *Europe*, *Asia*, and *Africa*; and the latter, *North* and *South America*.

An *Isthmus* is a narrow neck of land, which joins a peninsula to other land, as the Isthmus of Panama, which joins North to South America.

A *Peninsula* is a tract of land surrounded on all sides except one, where it is connected with other land, as the *Morea* in Greece.

An *Island* is a tract of land entirely surrounded by the sea, as Great Britain.

A *Promontory* is a high portion of land projecting into the sea, the extremity of which is called a *Cape*:—when the projecting land is not high, it is denominated a *point*, *head* or *headland*, *naze* or *ness*.

A *Mountain*, or chain of mountains, is an eminence of the earth, which is greatly elevated above its general surface: when the elevation is small, it is denominated a *Hill*: when it casts forth flames, a *Volcano*, as Mount Etna, in Sicily; Vesuvius, in Italy; Hecla, in Iceland.

A *Hill* is a small mountain, as observed above, though the term is frequently used to signify the larger kind. We say the *Appennine Hills* and *Pyrenean Hills*, as well as mountains.

A *Mount* is the diminutive of mountain, as *hillock* is of hill; though sometimes mount stands for mountain:—thus we say *Mount Taurus*, *Mount Caucasus*, more usually than the Mountain Taurus and Mountain Caucasus.

A *Valley* is a plain or level piece of land encompassed with hills or mountains: when the level part is of small extent, it is called a *dale* or *strath*.

Obs. That is properly called a *valley* which has a river or brook running through it, with long and narrow plains, called meadows, extending each side along its course, as the Vale of Evesham, in Worcestershire. But a *valley*, whose descent is gentle and easy, without a river or brook running through it, is usually called a *Bottom*, as Lock's Bottom, and Pratt's Bottom, in Kent.

A *Pass*, or *Dale*, is a narrow *way* or *passage* between two mountains or hills, leading from one part of the country to another.

Under the denomination of *Fertile Lands*, we include not only cultivated lands, but those which naturally produce either trees, plants, or other vegetables. Fertile lands may be distinguished into woodland, arable,* pasture, and meadow land. *Woodland* consists of forests, woods, groves, thickets, coppices, and parks.

A *Forest* is a large tract of land covered with trees. Some forests are of vast extent, reaching several days' journey, as the *Hercynian forest* in Germany.

A *Wood* is a small forest, as a *grove* or *thicket* is a small wood; and a *coppice* is a wood reserved for cutting every ten or fifteen years. The word *coppice* is generally used for underwood, such especially as affords shelter to animals, chiefly game.

A *Park* is a spot of ground, generally woody, enclosed

with walls or pales, wherein are larger and smaller plains, called *lawns*.

Pasture Land is that which produces *grass* and herbage fit for nourishing animals: some is inclosed and some open. The pasture land which is not inclosed is called a *common*; because our ancestors, in the division of the lands, left those unfit for their tillage as a *waste* for the cattle of one or more parishes to feed on.

Meadow is uncultivated ground, the grass of which is reserved for hay. A meadow is sometimes called a *mead*, but the latter term is chiefly used in poetry.

Barren Lands are those which produce nothing, and are commonly called *deserts*. Deserts are of two kinds, *sandy* and *stony*. A desert is any space of barren land, whether small or large. There are but few in Europe; but they are much more numerous in Asia, Africa, and America. Deserts are distinguished into *greater* and *lesser*, as they are more or less extended. Sometimes, deserts of many days' journey are called *little* or *small deserts*, in opposition to larger; thus, the desert between Aleppo and Bagdad, extending above twenty days' journey, is called the *Little Desert*, to distinguish it from that between Aleppo and Bassorah, called the *Great Desert*, which is forty days' journey. The name of deserts is also given to fertile lands, which are uninhabited, as the *Desert of Ukraine*, in Poland, which lies along the river Dnieper. Most of the deserts in Tartary, represented so dreadful and barren, are of this kind; it would be more proper to call these *wildernesses*.

Downs are undulating tracts of country, rising in gentle eminences. The word *down* is derived from the French word *dune*, or the Celtic word *dun*, a hill or eminence. The term *Down* is also applied to the roadstead for ships, between the South Foreland and Ramsgate. Downs on land commonly signify a high open country, free from trees or shrubs, grazed by sheep, with hollows and rising places, as the Barham Downs, in Kent, the Banstead Downs, in Surrey.

The *Strand* is that part of the shore which is covered with the sea at high water, and lies bare at the ebb.

Sand-banks, are those heaps of sand under water, of which some appear when the tide is out, and others never appear. They are called *banks* because they are raised above the general surface of the bottom of the sea, like a bank, and are denominated *shoals*, *flats*, or *shallows*; because in those places the sea is shallower than it is in any other part.

When these banks have rocks mixed with the sand, they are commonly called *shelves*. A similar assemblage of rocks is called a *reef*.

The *WATER* is divided into *oceans*, *seas*, *straits*, *gulfs*, *bays*, *lakes*, and *rivers*.

An *Ocean* is a large body of salt water, which separates one great portion of the earth's surface from another. There are five great oceans on the globe, communicating with each other; namely, the *Northern*, or *Arctic ocean*, the *Southern*, or *Antarctic*, the *Pacific*, and the *Indian oceans*.

A *Sea* is a branch of the ocean, flowing between some parts of the continent; as the *Mediterranean sea*, the *Baltic sea*, &c. Some pieces of water that have no communication with the ocean, are also called *seas*; as, the *Caspian sea*, the *Dead sea*, the *Sea of Galilee*, &c.

A *Gulf* is a part of the ocean or sea, which stretches a great way into the land, by which it is surrounded, except at its entrance; as, the *Gulf of St. Laurence*, the *Gulf of Venice*, &c.

* Arable land is that which is fit for ploughing, and to produce corn.

A Bay is a great inlet into the land; as, the Bay of Biscay, on the west coast of France; the Bay of Bengal, between the western and eastern Peninsula of India; and Tor Bay, on the south-east coast of Devonshire.

A Creek is a narrow part of the sea, or of a river which runs but a small way into the land.

A Haven is an entrance of the sea within the land, as the mouth of some river or creek, where ships may find a safe anchorage; as, Milford Haven, in Pembrokeshire.

A Channel is a part of the sea situated between two opposite lands.

A Strait is a narrow passage, by which there is a communication between one sea or ocean and another; as the Straits of Gibraltar, the Straits of Constantinople, &c.; and where the water is so shallow as to be measured by the plummet, it is called a **Sound**.

A Lake is a body of water everywhere surrounded by land; except where a river runs into it, or flows out of it; as the lakes of Constance and Geneva; Lakes Superior, Huron, and others, in North America. In Scotland and Ireland, fresh-water lakes are generally called **Lochs**; as Loch-Lomond, Lough-Neagh, &c.

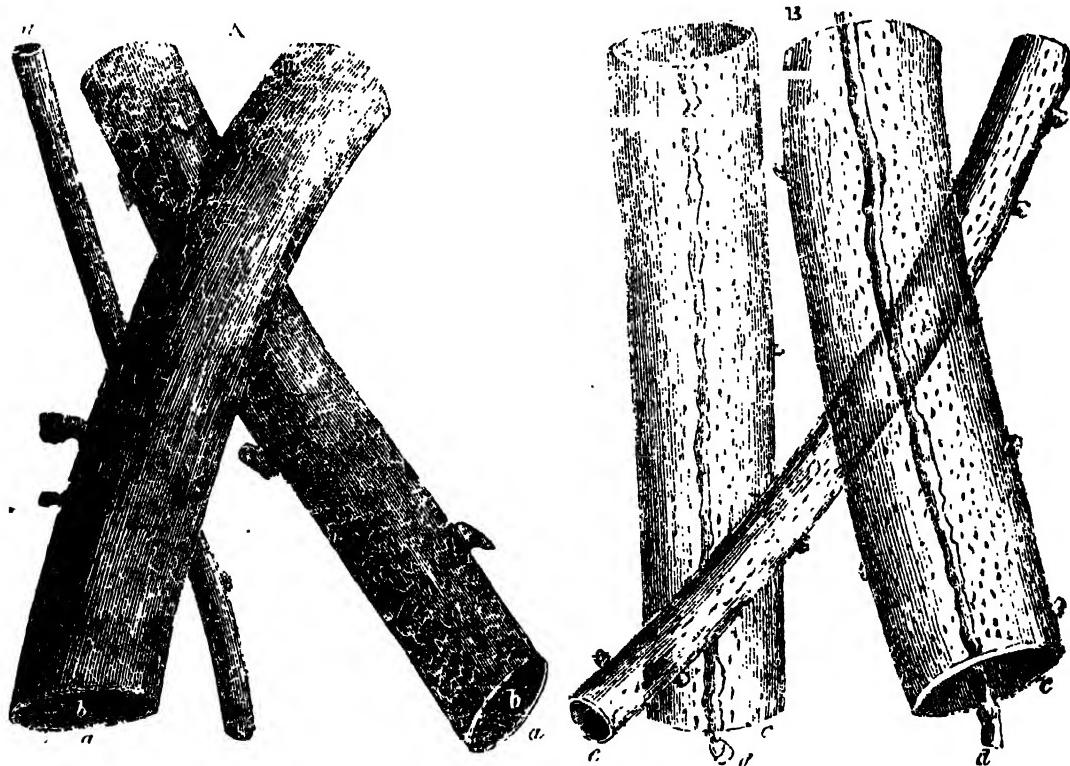
A River is a stream of fresh water that commonly has its rise in some mountain or lake, and runs in a long narrow channel through the land, till it falls into the sea, or into some other lake or river which ultimately discharges itself into the sea or ocean; as the Amazons and la Plata, in South America; and the Rhine and the Danube in Europe.

A Cataract is a fall of water in a large river; as the Falls of Niagara, between Lakes Erie and Ontario..

A Canal is an artificial river, made for the purpose of the more easy and ready mode of conveying heavy goods from one place to another.

Obs. A river on which vessels may sail is called a **navigable river**. The hollow, or cavity in which a river runs between its banks is called a **channel** or **bed**; a place where two rivers meet, a **conflux**. When a river falls over a precipice, it is called a **cataract** or **fall**; but, if the quantity of water is small, a **cascade**. The sources from which a river flows are called **springs**. The **right** or **left** bank of a river is that which is on the right or left side of a person going from its source towards its mouth. The **upper** part of a river is that nearest its source; and the **lower** nearest its mouth. A stream of less note than a river is called a **rivulet** or a **brook**. A **rivulet** is a much larger stream than a **brook**. We say the rapid stream, the clear rivulet, the gurgling brook. A **creek** is sometimes called a **port**, **core**, or **armlet**. An **estuary** or **frith**, is the widening of a river, or where several rivers meet; as the Humber, at Hull, and the Frith of Forth in Scotland. A **roadstead** or **road**, is that part of the sea wherein ships may anchor, as the roadstead or roads off Yarmouth. A **coast** or **shore** is that part of a country which borders on the sea, as the coast of Kent. The words **coast** and **shore** are used indifferently. It is distinguished according to its nature, as **beach**, **bank**, or **cliff**.

HUMAN HAIR, MAGNIFIED 200 DIAMETERS, AS SEEN BY MEANS OF THE MICROSCOPE.



A The coloured hair of a person 25 years of age; **a** the external tube; **b** the internal coloured pulp. **B** The white hair from a person 106 years of age; **c** the external tube, now seen to be transparent; **d** the remains of the internal coloured pith, separated from the tube, and almost perished; **e** a smaller hair crossing a larger one, to make their transparency more obvious.

ON THE HUMAN HAIR;
WITH THE CAUSE OF GREYNES IN OLD PERSONS.

NOTHING that God has made can be deemed unworthy of investigation. Every object in nature, however simple or minute, presents a germ of boundless knowledge to the thoughtful mind. Hence so common, and apparently insignificant a thing as a single hair, when carefully examined, offers a wide field of observation to the persevering inquirer.

The NATURALIST beholds in it the type of all those species of hair, which, under different and most appropriate modifications, clothe the animal kingdoms. In the insect tribes, he observes it under a thousand beautiful and ever-varying forms, decorating and defending caterpillars, butterflies, and moths. In birds, he observes it to assume the form of feathers, which not only embellish and clothe the animal, but give to the wings and tail a most important part of their locomotive powers. Again in the mammalia, he finds it exhibited in endless but most necessary varieties. None are without it, not even the whales.* And in every case the length, quality, and colour, is exactly that which best suits the peculiar wants and instinctive habits of the animal.

Leaving these creatures of a day, he turns to immortal man; and here the same variety, and the same design and appropriate conformity of the objects to the end, are exhibited. No two heads are alike; and most nations, and indeed many families, have their own peculiar characteristics in this respect. Thus in the European, soft, waving, and full, and of a brownish or chestnut colour; the Mongolian and American, stiff, straight, thin, and black; the South Sea islanders, soft, thick, curly, and black; the Negro, crisp, frizzled, short, and black.

The ANATOMIST sees in the structure of a hair, a beautiful and economical piece of mechanical contrivance. Taking the human hair for example, he observes, first, that as an appendage to the skin, it partially participates in its organization. The skin is composed of three layers; the first, or external of which, is called the *cuticle*, or scarf skin, and is transparent and abundantly porous; the second, *rete mucosum*,—a thick mucous cellular membrane, containing in its cells the colouring matter, which, seen through the cuticle, constitutes the colour of the skin; and the third, or lowest of the series, the *cutis*;—it is from this that the hair springs. Every hair originates in a bulb, seated within the skin, which, in one newly pulled, may be seen with the naked eye. In its passage through the skin, it pierces the layers in an oblique direction, and thus assists in binding them together. Each hair is composed of two distinct parts, an external tube, and an internal pith. The former of these resembles the cuticle in its nature and chemical properties; and like it is of a white colour, whatever may be the colour of the hair itself. The central portion, or pith, is that which gives to the hair its peculiar colour. It is composed of extremely delicate vessels, containing a peculiar coloured fluid. In this respect, it exactly resembles the mode in which the skin itself is coloured. Indeed, it would appear, that the tube of the hair is composed of condensed cuticle; and the pith, a modification of the *rete mucosum*.

Each hair is accompanied by a nerve and blood vessels, from the latter of which the matter for the growth of new

* Fishes and reptiles are totally destitute of hair: and crustaceous animals have it only in particular places, as in the joints of the feet and the margin of the shell, &c.

hair is continually deposited. In old persons, when the nervous power begins to lose its accustomed energy, the colouring matter of the hair ceases to be secreted, and the cellular pith, which contained it, shrivels up, and is sometimes totally absorbed. The tube of the hair is then seen of a transparent whiteness, and in common language a grey-head is the result.†—(See the Engraving.)

To the CHEMIST, a hair offers an interesting analysis. It has been found by Vauquelin, that black hair is composed, 1, of a considerable quantity of animal matter; 2, a small portion of a white thick oil; 3, another oil, of a greenish colour, in greater quantity than the other; 4, iron,—but the form under which it exists is unknown; 5, a few particles of oxide of manganese; 6, phosphate of lime; 7, carbonate of lime, in very small quantity; 8, silex, or flint, in a large quantity; 9, lastly, a considerable portion of sulphur.

To the inquirer in *Natural Theology*, who looks abroad into the wide and instructive field which natural philosophy presents, to find objects demonstrative of the design and wisdom of the Creator, perhaps nothing is better adapted for his laudable purpose than the study of the organization and structure of this minute portion of the animal frame. He admires that infinite power of combination which, from *three primitive colours*, has tinted the hairs of millions of different species of living creatures, each one with a colour distinct and peculiar to itself; the individuality of thousands of genera is thus preserved, which, without it, would have been a scene of monotonous and inextricable confusion. Thus captivated, he looks more closely and from a general survey proceeds to a particular examination;—and here new themes for admiration stimulate his industry. He notices the exquisite adaptation of hair to the wants of the creatures—the silky hair of the mole, “the quills upon the fretful porcupine,” the mane of the lion, the wool of the merino and the Cashmere sheep,—all these he studies, and asks himself, Whence this interesting variety? He takes a step further—he observes the difference of hairs on different parts of the same body,—as, for instance, those on the mane, fetlocks, and tail of a horse; and he finds in every case that Infinite Wisdom and Infinite Power have been engaged in providing different peculiarities for all those contingencies which would otherwise destroy the happiness of the beings to whom they are now a source of comfort and protection. He is particularly struck with the non-conducting power of hair to heat; for it is by this that hair is so admirably adapted for the winter clothing of animals. Enveloped in hair, the heat of the body is effectually preserved from dissipation—it is shut in with all that certainty which, in the winter season, our furred coats and double blankets so comfortably demonstrate.

Again, he is charmed with noticing the flexibility of hair:—no way impeding the motions of those animals which it clothes—its strength, by which it is cleansed without the slightest fracture—its insensibility to pain; for had it been of a very sensitive nature, it must, from its exposed situation, have been a source of continual pain to the animal.‡—All this, and far more than we have space to enumerate, is noticed by the theologian, who, with a

† Sudden terror or grief, besides many diseased actions of the skin, will produce the same effect. In the case of terror or grief it is supposed that the nerve at the root of the hair suffers a paralysis, which stops any further deposition of the colouring matter.

‡ Hair is of a vegetative nature, and hence it grows long after death. Instances are on record, in which coffins, after having been long buried, have been found full of hair, the growth of its dead inhabitant.

grateful heart, returns thanks to Him who has said, that "not a hair of our head falls to the ground without his permission;" and acknowledges that His goodness is OVER ALL HIS CREATURES.

AUTUMN.

AUTUMN is the third season of the year, and is generally considered to comprise the months of *August, September, and October*. It is during the early part of this fruitful season that the various productions of the earth are gathered in; and man secures his stores for consumption during the ensuing year. Autumn also witnesses the decline of vegetation; and in this season the general annual decay of Nature's most pleasing beauties visibly commences. The gay splendour of the summer months gives way to the more solemn tints of the autumnal season; the emigrating feathered tribes, warned by the gradual cooling of the atmosphere, now wing their way to warmer and more congenial climes; the rustling foliage of the trees, having lost its beautiful freshness, forsakes the spreading boughs which it adorned; and the vagrant winds whistle through the deserted branches as if condoling with them on their utter destitution. But these are the later indications of the autumnal seasons. Ere these changes have become general, the joyous voice of the reaper is heard among the fast falling corn; and the gentle voice of the sickle salutes the ear of the wanderer in the fertile vales.

The scene afforded by an extensive open country, covered with fields of yellow waving corn, richly glowing in the bright sunbeams, and thickly besprinkled with cheerful husbandmen busily occupied in the various parts of their labour, is a prospect pre-eminently delightful, both to the eye and to the heart; and should inspire, in the human breast, the deepest sentiments of gratitude to our bountiful Creator, and benevolence to our fellow-creatures.

"Hark! where the sweeping scythe now rips along;
Each sturdy mower, valorous and strong,
Whose writhing form mortal heat defies,
Bends o'er his work, and ev'ry sinew tries,
Prostrates the waving treasure at his feet."

Autumn is the happy season in which the beneficent Creator bestows upon us all the fruits of the earth in great abundance. The term fruit must not here be merely applied, as in common it generally is, to a few peculiar products, but, as in the more comprehensive language of the naturalist, it must include every production of vegetation, by which the rudiments of a future progeny are developed, and separated from the parent plant.

The silent progress of maturation* is in autumn completed, and human industry joyfully collects into its garners the rich treasures of the soil.

About the middle of autumn, the herring-fishery attracts the care and attention, and employs the exertions, of a numerous class of industrious men. Herrings are an object of great importance to us, inasmuch as, during the whole year, either fresh for the whole season of taking them, or afterwards salted and dried, they furnish a very acceptable food to the poor, and, in the former case, a delicacy to the rich. Herrings abound in immense shoals in the frozen sea, near the arctic pole; from whence, in September, they annually visit the English and Scotch shores in vast numbers. The cause of this periodical

emigration has never been positively ascertained. Various opinions concerning it have, at different times, been promulgated; but, whatever may be the cause, it is a certain fact, that they do regularly thus remove from their usual northern station. The prodigious increase of this species of fish is truly astonishing: a single herring lays at least ten thousand eggs, when near the British coasts. Migration is, indeed, a general feature of the autumnal season, both among the feathered and the finny tribes.

All the various birds of passage, which, in the spring, seek the genial British clime, depart in search of warmer atmospheres, when the coolness of autumn announces the approach of winter. Some of these visit very remote regions, and perform aerial voyages, over countries and oceans of surprising length. The stork, the crane, the quail, the fieldfare, the woodcock, the nightingale, the swallow, the marten, and the cuckoo, are the principal migrating birds, although there are various others of inferior note.

This system of emigration is exceedingly wonderful, and affords a very remarkable instance of that powerful instinct which the Creator has implanted throughout the animal world. Two things especially are surprising: the one, that such untaught and unthinking creatures, as we suppose birds to be, should so well know the proper seasons for their coming and going; and that, with such admirable regularity, some should arrive when others depart. Doubtless, the difference of heat and cold, and the want of food, might warn them to change their abode: but why, when the air is mild, and food plenty, do they nevertheless so punctually depart? how do they know in what climates they shall find sufficient heat and food? why, indeed, should they remove at all? why should they not stay, and endure the chance of the seasons, as other animals do? or, how is it that, throughout all the world, no place can be found to afford them sustenance and habitation during the year?

The other extraordinary circumstance is, that they should so perfectly know whither to go, and which way to steer their course. By what instinct does a little defenceless bird venture over such vast tracts of sea and land? and how do these adventurous voyagers contrive, through the darkness of night, and without knowledge of the countries, still to pursue a direct course to their destination? why, also, is it, that they unanimously depart at the same time, as if they had consulted together, and fixed the period for their journey?

"Who bids the stork, Columbus-like, explore
Heavens not his own, and worlds unknown before?
Who calls the council, states the certain day?
Who forms the phalanx, and who points the way?
Where do the cranes, or winding swallows, go,
Fearful of gathering winds and falling snow?" POPE.

It is equally inexplicable to us, how they can know that another land is, at certain seasons, more proper for them than this; and that they shall find better accommodation in a distant country than in that which they then inhabit. These very interesting, but embarrassing, inquiries have never yet been satisfactorily elucidated; nor is it probable that they will be, as it seems impossible that we shall ever obtain a sufficient knowledge of the nature and instinct of the feathered travellers, to be enabled to trace the origin and movement of their migratory impulse. We can, therefore, only admire, in contemplating the wonderful motions of birds, the wise and beneficent ordinances of that Supreme Being, who has thus wonderfully provided food and habitation congenial

* The act of ripening; the state of growing ripe.

to their habits, and taught them so unerringly when, where, and how, to find those necessary provisions.

Autumn is also the season for the animating and healthful sports of the field. In this season partridges abound, and most especially in England. These interesting birds pair early in the spring; about the month of May the female makes her nest, of grass or dry leaves, upon the ground, in which she lays from fourteen to eighteen or twenty eggs. The young birds learn to run immediately they are hatched, and become busy, sometimes even with a part of the shell sticking to them, in picking up ants, grain, slugs, &c. (To be continued.)

THE MIRROR OF THE MONTH.

SEPTEMBER.

THIS month is so named from having been, formerly, the seventh month of the year, when, according to the ancient calendar, March was the first, or beginning of the year. It derives its name from the Latin word *Septem*, seven. On the same principle were named *October*, from *Octo*, eight; *November* from *Novem*, nine; and *December*, from *Dicem*, ten. In our calendar, it is the ninth month.

The Saxons called September, *Gerst Monat*, because, in this month, they generally gathered in *gerst* or *barley*. The drink which they made from *gerst* was called *beere*, and on this account they often termed *gerst*, *beer-legh*, as being the grain from which *beere* was made. *Beer-legh* was soon corrupted into *ber-legh*, and subsequently to *barley*, which is now the only English name used for *gerst*. In the same manner, the effervescence, or froth of *beere*, was first called *beer-heym*, then corrupted into *berham*, and, lastly, into *barm*.

HISTORICAL MEMORANDA OF SEPTEMBER.

THE first of September is dedicated, by the Roman Catholics, to the celebrated St. Giles, or *Egidius*, a native of Athens, and afterwards Abbot of Nismes, in France, A. D. 715. Here he lived two years with *Cresaris*, Bishop of Arles, and afterwards retired into solitude.

On the 2d of this month, the dreadful fire of 1666,* commenced at a baker's house, in Pudding-lane, near Fish-street-hill; and being impelled with strong winds, raged with irresistible fury for nearly four days and nights; nor was it entirely subdued till the fifth morning after it began.—(See the particulars in another part of our publication.)

PRESTON GUILD, one of the most splendid provincial festivals in England, which is held once in twenty years, was celebrated on the 2d of September, 1822.

On the 3d of September, 1737, died GEORGE LILIO, author of "George Barnwell," a tragedy, often performed in the Christmas holidays, and also of "Arden of Faversham," and "Fatal Curiosity."

In 1588, on the 6th, was the insurrection of the London apprentices, many of whom were taken and committed to Newgate: they were mostly of the trade of plasterers. Such disturbances have happened on many occasions, and sometimes attended with serious mischiefs; as on Evil May-day, 1516, and, more recently, the riots of 1780.

On the 7th, A.D. 875, St. Eunerchus was made Bishop of Orleans, in France. His elevation to that see was ascribed to a dove alighting on his head, in consequence of the prayers of the electors. (To be continued.)

* Old style. The new style commenced in 1752.

EXPLANATION OF THE MAP OF OPORTO, IN NO. LXVIII.

As an explanation of the Map of Oporto was promised to our readers, (and although the Map in a great measure explains itself,) yet, in compliance with our promise, we feel it right to give the following brief description.

The Map represents the plan of the City of Oporto and Environs, with Villa Nova on the south, and the City on the north sides of the River Douro, and with the road to Coimbra and Lisbon, running south of Villa Nova. The streets, public buildings, and convents, are clearly laid down. "Quinta dos Congregados," the scene of action during an attempt of the Miguelites to retake the city, is peculiarly conspicuous. The tree and streaked portions of the Map represent the beautiful Orange Groves and Olive Gardens which add so much to the scenery round Oporto, enlivened here and there by a *Merchant's Quinta*.

It will be in the recollection of our readers, that previous to Oporto being occupied, and also after its occupation by the forces of Donna Maria, various skirmishes took place in the neighbourhood to the north of the city. The bastion-like figures marked in the Map, represent the outposts and trenches of the contending armies, and the dates, the time when a battle or skirmish took place. When, however, the Miguelite forces were sufficiently strengthened, they took up their main position at Villa Nova, at the place marked "Serra do Pillar," which the forces of Don Pedro were obliged to evacuate, and retreat across the bridge of boats to the city;—and here was some sharp fighting, marked by the dates in the Map. Miguel now extended his line of attack and fortification to a considerable extent along the south side of the river; while Don Pedro, on the other hand, neglected no kind of defence on the northern side, so that the cannon planted by Don Pedro on the Parade near the River, and which he is represented to have often gallantly pointed with his own hand, played across the river upon the batteries of Miguel; and thus the form of attack continued, varied only by occasional sorties from the besieged, or a fresh attack by the besiegers upon a supposed weak point of the city, who in many cases crossed the river with a gallantry worthy of a better cause.

Without therefore entering into minute details, which have been sufficiently given in the newspapers, it may suffice to state, that the forces of Donna Maria were enabled, by the assistance of many English volunteers, successfully to hold out against the Miguelites, until the late defeat of the Miguelite fleet, and subsequent surrender of Lisbon to the constitutionalists. Meantime, an arrangement would seem to have been made by the Miguelites to strike a decisive blow. General Bourmont, one of the few remaining marshals of Napoleon's army, arrived just in time to hear of the defeat of the Miguelite fleet; and, no way disheartened, prepared for a further attack upon the city: but being since informed of the surrender of "Fort Almada," a very strong fortress opposite Lisbon (see Map, No. 69), and ultimately the city, to Count Villa Flor, and the forces of Donna Maria, he has since thought it expedient to raise the siege of Oporto, and abandon the trenches; and is supposed at this moment to be endeavouring, by forced marches, to concentrate his army with that of the Marquis of Chaves, in order, by a grand stroke, to take Lisbon by surprise.

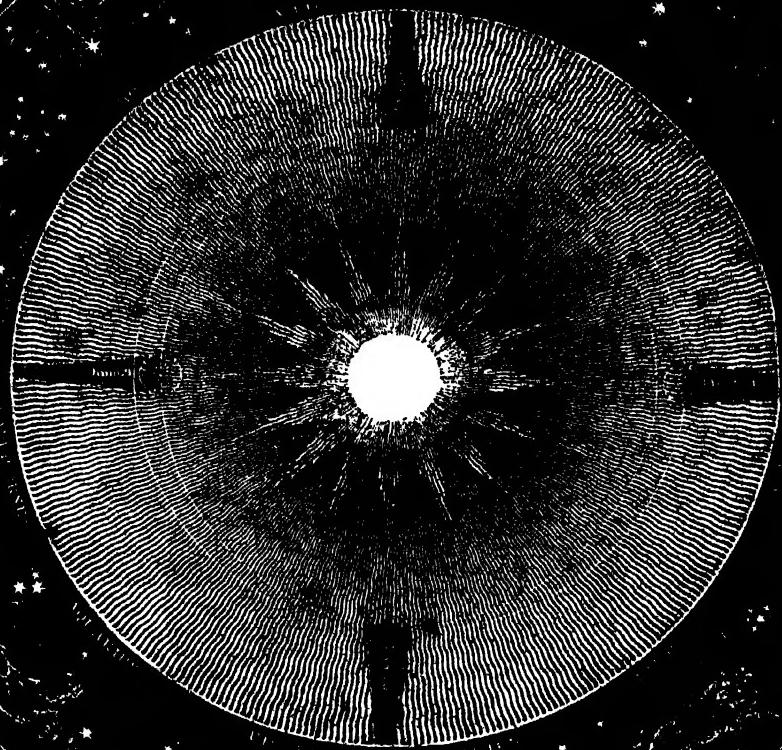
The forces of Donna Maria are reported to be aware of this, and are making every effort to defend the city, assisted, it is said, by the brave English marines, with the gallant Captain Napier at their head. A desperate conflict will probably be the result, which may speedily lead to a settlement of this unfortunate question, and the cessation of civil war, rendered more horrid by two brothers being the contending parties. Towards Lisbon, therefore, attention is at the present directed, near which, and probably near the road marked from Torres Vedras, in the Map, the conflict may take place.

Maps and Views of Lisbon and Oporto in Nos. 68 and 69.

Purchasers may now be supplied with any back number of this work, or in parts or volumes, by applying to any bookseller, as agents will be appointed in every considerable town.

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SIGNS OF THE EQUINOX



Edited for the Proprietors

BY J. C. GREENLEAF,

THE ZODIAC.

THE ZODIAC * is an imaginary zone or belt in the heavens, in which all the planets revolve in their orbits. Its breadth is reckoned different by different astronomers. It is generally made to extend from 8 to 10 degrees on each side of the *ecliptic*, the circle which the EARTH describes annually as seen from the sun, and which the SUN appears to describe as seen from the earth.

The Zodiac is divided into 12 equal parts, called *signs*, and each sign contains 30 degrees, corresponding to the 12 months of the year.

The signs of the zodiac are the following:—

1. Aries ♈ the Ram.
2. Taurus ♉ the Bull.
3. Gemini ♊ the Twins.
4. Cancer .. ☎ the Crab.
5. Leo .. ☋ the Lion.
6. Virgo ♍ the Virgin.
7. Libra ☎ the Balance.
8. Scorpio ♑ the Scorpion.
9. Sagittarius... ☏ the Archer.
10. Capricornus.. ♑ the Goat.
11. Aquarius.... ☎ the Water-bearer.
12. Pisces ☎ the Fishes.

Besides these constellations in the Zodiac, the stars in every other part of the heavens are reduced into constellations of some figure to which it is supposed each set of stars bears some resemblance. In the northern regions are 35 constellations, and in the southern 47; making in the whole, 94 constellations.†

Besides the stars mentioned in the several constellations, there are a great number not included in any constellation, and therefore are called unformed stars.

The total number of stars in the Zodiac is 1,016, in the whole of the constellations, 3,478.

The characters of the signs seem to be imperfect hieroglyphical outlines of the creatures whose name they bear. Thus—

- ♈ is a sketch of the horns of the ram;
- ♉ is the fore part of a bull's head;
- ♊ is a union of the heads of two kids;
- ♋ denotes the two fore-claws of a crab;
- ♌ represents the head and tail of a lion, with his back rising into a kind of arch, as it is said to do when he is preparing to spring upon his prey;
- ♍ is the body of a virgin, with an ear of corn in her left hand;
- ♎ this is nothing more than the beam of a balance;

* The term Zodiac is derived from the Greek word *Zodian*, an animal, because most of the constellations in it are the figures of animals.

† The ancients divided the Zodiac into the above 12 constellations in the following manner. They took a vessel with a small hole in the bottom, and having filled it with water, suffered the same to distil drop by drop, into another vessel set beneath to receive it; beginning at the moment when some star rose, and continuing until it rose the following night. The water fallen down into the receiver they divided into 12 equal parts; and having two other small vessels in readiness, each of them fit to contain one part, they again poured all the water into the upper vessel, and observing the rising of some star in the zodiac, they, at the same time, suffered the water to drop into one of the small vessels; and as soon as it was full they shifted it, and get an empty one in its place; when each vessel was full, they took notice what star of the zodiac rose, and though this could not be done in one night, yet in many they observed the rising of 12 stars or points, by which they divided the zodiac into 12 parts.—FERGUSON.

♏ is a slight sketch of the paws, long tail, and sting of a scorpion.

♐ represents the arms of an archer or hunter;

♑ denotes the horns, back, and tail of a goat;

♒ expresses a current of water;

♓ is the picture of two fishes tied back to back.

These several divisions of the Zodiac are called *signs*, because they serve as marks to distinguish the sun's place in the ecliptic; and their number was limited to twelve, because, during the sun's passage through the ecliptic, there are twelve lunations, which, it is probable, were the earliest methods in use for measuring time, except the alternate succession of day and night. But as twelve lunations are a few days shorter than the solar year, and as mankind were inclined, from habit, to have the year, after its length was more accurately ascertained, still divided as before into twelve months, they were obliged to observe the sun's annual path through the heavens, and divide it as nearly as possible into twelve equal parts, by noticing the most remarkable stars which were either in or near these parts. Hence came the twelve signs, the several names of which are explained above.

Of these signs, the *first six* are called *northern*, from their lying on the north side of the equator; the *last six* are called *southern*, from their being situated on the south side of the equator. The signs Capricornus to Gemini are called *ascending*, the sun approaching, or rising to the north pole, while it passes through them; and the signs from Cancer to Sagittarius are called *descending*, the sun, as it moves through them, receding or descending from the north pole.

As the *Ecliptic* and *Zodiac* are by many considered one and the same thing, it is proper to distinguish the one from the other. The Ecliptic is that circle in the heavens through which the earth makes its revolution round the sun, being the earth's orbit or path; hence this (imaginary) line properly belongs to the heavens.

The *Geographical Ecliptic* is an imaginary great circle drawn on the terrestrial globe, answering to, and falling upon, the celestial ecliptic, in the middle of the Zodiac; and whether we call it the *terrestrial* or *celestial* ecliptic, or the *path* of the earth or sun, it at all times signifies the *path* or *way* of the earth *round* the sun, in the space of twelve months, or a year. The ecliptic on the terrestrial globe, or map, is that graduated circle which crosses the equator obliquely, forming with it an angle of 23° 28'. The points where this circle crosses the equator are called the *equinoctial points*—the one is at the beginning of Aries, the other at the beginning of Libra: and when the sun is at either of these points, the days and nights are equal throughout the world.

The commencement of Cancer and Capricorn are called the *solstitial points*;‡ they are so called, because, at those times, the sun does not appear to alter his distance from the equator for several days. The time when the sun enters the northern *solstitial point* is called the *summer solstice*, because it is then the middle of our summer; and the time when he enters the southern is called the *winter solstice*, because it is then the middle of our winter. But in the southern hemisphere the solstices will be inverted,

‡ The word *solstice* is derived from the Latin words *sol*, the sun, and *sto*, to stand, or continue in the same place.

because it is our winter when it is their summer, and our summer when it is their winter.

The direct distance of the sun from the equinoctial, in his course through the ecliptic, is called his *declination*; which is said to be either *north* or *south declination*, according as he is on the north or south side of the equinoctial. The same term is also applied to any of the stars, or planets, and with the same meaning.

The signs of the Zodiac are counted from west to east, beginning with *Aries*, which is in the vernal equinoctial point; so that *Cancer* will be in the summer solstitial point, *Libra* in the point of the *autumnal equinox*, and *Capricorn* in that of the winter solstice.

The names and characters of the twelve signs are supposed to have been first introduced by the ancient Egyptians, who were remarkable for their skill in astronomy, and for the use of hieroglyphical, or symbolical characters. The months of *March*, *April*, and *May*, being the spring quarter of the year, when *lambs*, *calfes*, and *kids* (which are usually twins) are brought forth; their corresponding signs were therefore called **ARIES**, **TAURUS**, and **GEMINI**, that is, the *Ram*, the *Bull*, and the *Twins*. **CANCER**, the *Crab*, as moving sideways, or obliquely, represents the oblique motion of the sun in June, when he recedes from the summer solstice. **VIRGO**, the gleaning *Virgin*, with an ear of corn in her hand, is a proper emblem of August, the usual time of harvest. **LIBRA**, the *Balance*, is displayed in September, to signify, that in that month the sun enters the autumnal equinox, and dispenses an equal portion of day and night to every part of the globe. **SCORPIO**, the *Scorpion*, was adopted as the emblem of October, on account of the venomous diseases which then afflict the earth. **SAGITTARIUS**, the *Archer*, distinguishes November as the proper season for hunting. **CAPRICORNUS**, the *Goat*, for its activity in climbing the steepest mountains, became the hieroglyphic of December; when the sun, after having passed the winter solstice, ascends again towards the equinoctial. **AQUARIUS**, the *Water-bearer*, with his heavy urn, represented January, on account of the rains, which were then most frequent; and, lastly, **PISCES**, the *Fishes*, were very pertinent emblems of the fishing-season, which began in the Nile during the month of February, when the river, after overflowing the country, had returned to its natural channel.

To gratify the curiosity of our readers, as far as our plan will permit, it may not be amiss to observe, that, according to the opinion of many astronomers, the obliquity of the ecliptic to the equator has been always gradually decreasing, and their respective planes continually approaching to a coincidence. This opinion is not only supported by a comparison of ancient and modern observations, but by the consideration of the figure of the earth; for as the earth, as before observed, is flattened towards the poles, like an orange, the sun, being always in the plane of the ecliptic, may easily be conceived to exert its attractive power upon the protuberant parts of the equator, so as to be continually drawing the plane of it to a coincidence with that of the ecliptic, and thus diminishing the angle between them.

We have already observed, that the plane of the ecliptic makes an angle of $23^{\circ} 28'$ with that of the equator, or equinoctial; as their axes, therefore, intersect each other in their respective centres, they must form the same angles; so that the poles of the ecliptic will be $23^{\circ} 28'$ from the poles of the earth.

The sun is eight days longer in the northern half of the ecliptic than in the southern; and, consequently, the summer half year is eight days longer than the winter half. To conceive the reason of this, it will be sufficient to remark, that the orbit of the earth is elliptical; that the sun is placed in one of the *foci** of the ellipsis; and the earth is nearest to that focus, and consequently to the sun, at the latter end of December, (or in the eighth degree of Capricorn,) and farthest from it at the latter end of June (or in the eighth degree of Cancer), as is evident from the diameter of the sun appearing to be largest at the former of those times, and smallest at the latter. It having, therefore, been discovered that the velocity of any planet which moves round the sun, will always increase as its distance from the sun decreases, and vice versa, it will follow that the motion of the earth in its annual orbit will be swifter in the winter than in summer, and, consequently, that the sun will appear longer in the northern half of the ecliptic than in the southern.

As none of the orbits or ecliptics of the planets make an angle of above eight degrees with that of the earth, it has given rise to that imaginary belt or zone round the celestial globe which is formed by describing on each side of the Ecliptic a parallel circle at the distance of eight degrees broad, called the *Zodiac*, as described above.

OF THE EQUINOXES AND SOLSTICES.

1.—EQUINOXES.

THERE are two equinoxes, the *Vernal* and the *Autumnal*. The **VERNAL EQUINOX** is when the Sun enters Aries, which commonly happens about the 21st of March. The sun then rises due east at six in the morning, and sets due west at six in the evening, all over the world, the Frigid Zones excepted; consequently, the day and night are of an equal length; namely, 12 hours each.

The **AUTUMNAL EQUINOX** is when the Sun enters Libra, generally on the 23d of September. The time of the sun's rising and setting, and the length of the day and night, are then the same as at the Vernal Equinox.

2.—OF THE SOLSTICES.

The **SUMMER SOLSTICE** is when the sun enters Cancer, generally on the 22d of June. The inhabitants of the Northern Hemisphere have then their longest days and shortest nights; but those of the Southern Hemisphere the contrary.

The **WINTER SOLSTICE** is when the sun enters Capricorn, generally on the 22d of December. The inhabitants of the Southern Hemisphere have then their longest days and shortest nights; but those of the Northern Hemisphere the contrary.

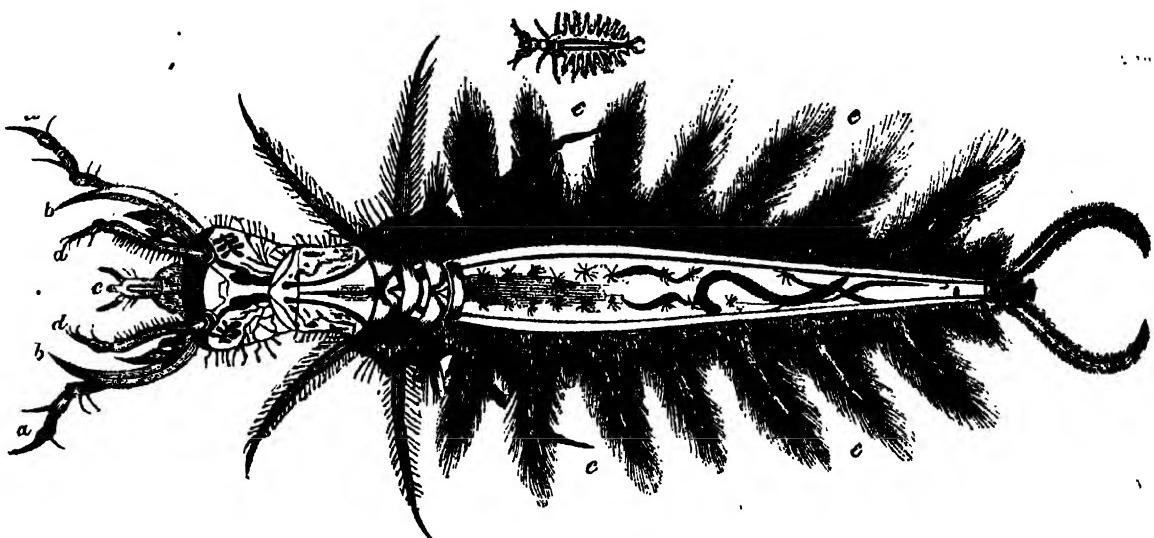
Obs. The term *Solstice* is derived from the Latin word *solstitium*, it being that time when the sun is at the greatest distance from the equator, and is thus called, because the sun then appears to stand still, and not to change his distance from the equator for some time,—an appearance owing to the obliquity of our sphere, and to which those living under the equator are strangers.

PHASES OF THE MOON IN SEPTEMBER, 1833.

Last Quarter	7th day, at 5 in the morning.
New Moon	13th 10 in the afternoon.
First Quarter	20th 7
Full Moon	28th 11

Foci, the plural; *focus*, singular; point of concentration,

THE HYDROPHILUS,* OR WATER FIEND



THE LARVA OF THE GREAT HYDROPHILUS: NATURAL SIZE, AND MAGNIFIED.

A STAGNANT pool, or nettle-margined ditch, are objects usually regarded with dislike. We are educated to avoid them, and fashion prescribes the uninstructive monotony of straight roads and paved streets, as more becoming haunts for the insatiable intelligence of man. But why should we suffer limitations where nature prescribes none? Let us forget all such prejudices, and see whether a "pond" is not capable of adding greatly to our information and amusement.

It swarms with life! Upon its surface hundreds of different species of insects are swimming. Water spiders, water-measurers, water-bugs, and water-beetles, with numerous species of two and four-winged flies, are engaged in an extraordinary dance; and the most complicated figures are continually evolved, with all the ease and celerity of long practice. Their lives, brief, but joyous, tell us that God, in his institution of the laws of existence, has inseparably linked obedience and happiness together.

At the bottom of the pond, a great variety of beetle-grubs, gnat-maggots, blood-worms, caddis-worms, &c. are burrowing in the soil, excavating galleries, building houses, laying snares for their prey, together with all those "ceaseless actions" by which life is perpetuated.

Midway in the water, the diving spider, suspended from a gem of air, pursues his sub-marine voyage; several brilliantly coloured mites, with the larvae of numerous water-beetles, are swimming rapidly about; each one impelled, by unerring instinct, to the most exact discharge of its destiny.

Here, then, is, indeed, a microcosm,—a little world of life,—thousands of creatures busily engaged in the most interesting operations, and all within the space of a few feet. No irregularities disturb the peaceful tenour of their ways; no sound betokens the intensity of their pursuits; but all is so quiet, that "not a sound lives betwixt them and silence." The very calm invites us to medi-

tation. Let us then catch one of those singular creatures, which is in such rapid pursuit of an insect double its own size; it is the larva of the great Hydrophilus, and is called the water fiend.

This insect, of which the cut is a representation, is of a fierce disposition, with a strong carnivorous appetite; it is armed for this purpose with very deadly weapons, which it uses with the most destructive ferocity.

Messrs. Kirby and Spence, speaking of the family to which it belongs, have the following interesting account of its nest, which may be found in almost any pond during the month of May. "In form," say they, "it somewhat resembles a turnip when reversed; since it consists of a pouch of the shape of an oblate spheroid, the great diameter of which is three quarters of an inch; and the small, half an inch, from which rises a curved horn, about an inch long, and terminating in a point. "The animal," (then in the beetle state,) "is furnished with a pair of anal spinners, which move from right to left, and up and down, with much quickness and agility; from these spinners a white and glutinous fluid appears to issue, that forms the nest, or egg pouch, which it takes the animal three hours to construct. The exterior tissue is produced by a kind of liquid and glutinous paste, which, by desiccation, becomes a flexible covering impermeable to water; the second, which envelops the eggs, is a kind of light down, of great whiteness, that keeps them from injuring each other. The tissue of the horn is of a silky nature, porous and shining, and greatly resembling the cocoons of butterflies. At its base is the opening prepared for the egress of the larvae when hatched, which is closed by some threads, that, by means of the air confined in the cocoon, or pouch, hinder the water from getting in. This nest does not float at liberty in the water till after the eggs are hatched, the parent animal always attaching it to some plant. By means of this unusual process for a beetle, which this insect is instructed by Providence thus to perfect, the precious contents of its little ark are secured from the action of the element, which is to be the theatre of their first state of existence, from the voracity of their enemies,

* HYDROPHILUS. A name taken from two Greek words signifying water and lover, and given by LINNAEUS to a genus of aquatic beetles or water-lovers.

until the included eggs are hatched, and emerge from their curious cradle."

The newly-hatched larva grows rapidly, and in accordance with a law which has been observed to prevail among carnivorous animals, the head, with the jaws and its appendages, are developed more rapidly than the other members.

All its parts are so transparent, that the circulation of the vital fluids can, with the microscope, be easily perceived, as well as the motions of the principal viscera. In the full grown larva, its body is of an oblong spindle shape, and carries from its sides seven pairs¹ of oars (e), with which it paddles its way through the water with great speed. This of itself is well worthy of close observation, and should be viewed in connexion with instruments for similar purposes in other insects. The subject is varied and interesting—"some move by the same motion of the legs as they use in walking, or by stroke as, in swimming; others, for this purpose, employ as oars certain plates, which terminate their tails, or, as in the present case, fringe the sides of the body; others, again, swim like fish, with an equable motion; some move by the force of the water which they spirt from their arms; and others again swim about in cases." But to return to our description: the larva has six legs, well armed with claws, a large head, strong jointed antennæ, and very powerful jaws. The animal is generally of a yellowish brown colour; and in length about an inch and a half.

Dr. Goring, who minutely examined this creature, and to whom we are chiefly indebted for our figure, states that in the capture of its prey, considerable instinct is exhibited. He says that if its victim should have any one part more vulnerable than another, that part is always first attacked. The usual mode of procedure is as follows. The Hydrophilus, swimming horizontally, turns up his head at right angles with his body, and surveys the space above him; when he perceives his prey, he rises gradually beneath it, and seizes it with the feelers (a), and grasping it firmly, pierces it to death with his jaws (b); he then brings it to the point of the sucker (c), and speedily exhausts it of its juices. But should the insect attacked be covered with a shell or hard skin, so as to make the abstraction of nutriment difficult, the Hydrophilus then crushes it between the inner scizzor-like jaws (d), and sucks it at leisure.

After it has laid in this state a considerable time, it bores a hole in the earth at the bottom of the pond, and buries itself, and here it changes into the chrysalis or pupa state. In this process, the skin upon its back splits, the head, legs, &c. fall off, and the pupa emerges. After a while it undergoes its final metamorphosis, and comes forth in the form of a perfect beetle.

These beetles are amphibious, and live occasionally both in water and on land. The author of "Elements of Natural History," says they may be seen in ponds during the summer, frequently rising to the surface for fresh air, they swim well, and when laid on their backs restore themselves by whirling round. They rest in the shade, keep in the water during the day, come abroad in the evening, and are sometimes found sitting on the plants by the edge; they fly by night, and after having been long out of the water, they cannot dive but with difficulty.

In conclusion, let it not be supposed by any one that the destructive appetite of this animal in any way disturbs the happiness of its companions. They know nothing of death, and when their appointed hour comes, they pass quietly and in a moment, into its oblivious embrace. Even allowing them to possess fear, still they may be happy, for

it is guilt only that makes fear painful, and of that they are destitute. Indeed, fear of their enemies may constitute part of their pleasures, for as Paley has observed, the chief employment of the hare is to conceal herself from her enemies, in that she finds enjoyment, and although no creature is so hunted, none is more happy.

AUTUMN.

(Continued from page 560.)

Towards the close of autumn, in October, the ploughing and sowing of the ground for a future harvest takes place. The winter corn, and indeed most of the provision for ourselves, and for many animals, is then deposited in the earth. The process of the vegetation of corn is one of the most wonderful, as well as the most interesting, operations in nature; hence an account of it, from the pen of an author well versed in the subject, cannot but be acceptable to our readers:—

"Nature, at first, works in secret; but her operations may be discovered by taking some of the grains out of the ground when they are beginning to shoot. Two days after the grain is put into the earth, it is swollen by the juices, and begins to shoot. The shoot is always at one end of the grain, and that part of it which is next the outside of the grain is the little root of the future plant. The corn, when sowed, generally begins, within twenty-four hours, to pierce through the coat, and unfold itself. The root and stalk become visible. The root is first wrapped up in a bag, which it bursts open. Some days after, the other roots shoot out of their sides. The fifth or sixth day, a green stalk springs up above the ground. It remains some time in that state, till the fine season comes, when the ear of the corn breaks out of the coats, in which it had been inclosed and protected from cold and uncertain weather.

"The wisdom which appears in the construction and the vegetation of corn is very striking. The leaves, for example, which surround it before it has attained its full growth, even these have their use; and it seems as if the wisdom of the Creator had placed them round the blade for the same reason that an architect raises a scaffold about a building, which, when the building is finished, he takes away. For, as soon as the blade has attained its full length and consistency, the leaves which protected it dry up and fall off. Whole months pass away, before the ear of corn ventures to appear and expose itself to the air; but, as soon as every thing is prepared for the formation of the blossoms and fruit, they all appear in a few days. With what skill also are the stalks and the ear of corn constructed! If the former were higher, the native juice could not so well penetrate into them; if, on the contrary, the corn had been placed lower, the moisture would have made it spring up before it was ripe, and birds and other animals would get at and destroy it. If the stem were weaker and smaller, the wind would break it; and if it were stronger and thicker, little animals might lodge in it, and birds would perch upon it, and pick out the grain."

Painters emblematically represent autumn as a woman richly dressed, with a garland of vines on her head; holding a cornucopia* full of fruits in her right hand, and a bunch of grapes in her left. This season is thus represented.

* CORNUCOPIA, among the ancients, a *horn*, out of which a plenty of all things was supposed to grow. It is generally the characteristic of the goddess of plenty, and described in the form of a large horn, adorned with flowers, and filled with fruits.

bented, from its being that part of the year when the earth is disposed to bestow the fruits already ripened by the heat of the summer. Her rich dress, the garland, the cornucopia, the vines and other fruits, signify the plenteous produce of this season for the use of mankind.

MIRROR OF THE MONTH.

THE Summer has now retired from the northern hemisphere, and is fast returning to the regions of the south. Although the generally chill and foggy mornings and evenings of September, in this part of the globe, are unwholesome to those who cannot guard against their effects; yet the month, on the whole, is usually pleasant, as it blends the warmth and serenity of summer, with the bracing vigour of autumn. In this month, the corn harvest is generally completed in all the northern parts of Great Britain; yet, the labour of the husbandman is not then at an end, as the fields must immediately be again ploughed, and prepared for the winter corn. In the counties of Worcester, Somerset, Devon, and Hereford, cider-making, the vintage of England, now commences. In those counties it constitutes the principal beverage of the people; but in London it is esteemed as a luxury. Perry is also now made. The fruits in season in September are chiefly peaches, plums, nectarines, and pears. Apples, unless for immediate use, are generally suffered to remain later on the trees. Garden flowers now become scarce; but we yet have those of the wild honeysuckle, arbutus, passion-flower, marigolds, sweet peas, mignonette, the michaelmas daisy, the asters, saffron, and ivy, together with some few others of less note. Rural scenery, however, is much enlivened by the variety of colours assumed towards the end of the month, by the fading leaves of trees and shrubs.

In this month the migrating birds take their departure; flies become troublesome; but they, as well as other insects, soon yield their lives, or sink into torpidity, as the autumn advances, towards the approach of winter. The finny tribes of the ocean now begin to seek the creeks and bays; and herrings become plentiful on the coasts, and in the friths of the north. The autumnal equinox, or time when the days and nights are equal, occurs, at which time rainy storms are usual; partridges abound; hazel-nuts ripen; the redwing and fieldfare, which migrated in March, return; the ring-ouzel removes to the south-eastern parts of the island; the curlew begins her clamours; wood-owls hoot; hares congregate; the saffron butterfly becomes visible; the woodlark, thrush, and blackbird are heard; and the entrances to bee-hives are diminished, in order to prevent the intrusion of wasps and other pilferers. The leaves begin to fall from the trees, and the equinoctial winds scatter them about, as well as the seeds of plants, that the elementary breath of nature dispenses abroad, sowing them on the earth, till spring shall draw them out, the harbingers and ornaments of a future fruitful season. So mortality scatters the human race, and will continue to do so till the day-spring of eternity shall announce a summer of everlasting life.

THE FIRE OF LONDON.

THIS destructive conflagration broke out on Sunday morning, September 2, 1666; it commenced at the house of one Farryner, a baker, in Pudding Lane, within ten houses from Thames Street, and so rapid was its progress, that no human efforts could arrest its course.

We have an ample account of it by an eye witness

(Mr. Evelyn,) in whose words we give it to our readers, only taking the liberty to alter the orthography, so as to render it more intelligible to present curiosity.

"September 2, 1666.—This fatal night, about ten,^{*} began that deplorable fire, near Fish Street in London.

"September 3.—The fire continuing after dinner, I took coach, with my wife and son, and went to the Bank-side, in Southwark, where we beheld the dismal spectacle, the whole city in dreadful flames, near the water side; all the houses from the Bridge, all Thames Street, and upwards tow~~ards~~^{the} Bank-side, down to the Three Cranes, were now consumed.

"The fire having continued all th^t night (if I may call that night which was as light as day, for ten miles round about, after a dreadful manner) when conspiring with a fierce eastern wind, in a very dry season; I went, on foot, to the same place, and saw the whole south part of the city burning, from Cheapside to the Thames, and all along Cornhill, (for it kindled back against the wind as well as forward,) Tower Street, Fenchurch Street, Gracing Street, and so along to Baynard's Castle, and was now taking hold of St. Paul's Church, to which the scaffolds contributed exceedingly.

"The conflagration was so universal, and the people so astonished, that, from the beginning, I know not by what despondency of fate, they hardly stirred to quench it, so that there was nothing heard or seen, but crying out and lamentation, running about like distracted creatures, without attempting at all to save even their goods, such a strange consternation there was upon them; so as it burned, both in breadth and length, the churches, public halls, Exchange, hospitals, monuments, and ornaments, leaping, after a prodigious manner, from house to house, and street to street, at great distances one from the other; for the heat, with a long set of fair and warm weather, had even ignited the air, and prepared the materials to conceive the fire which devoured, after an incredible manner, houses, furniture, and every thing.

Here we saw the Thames covered with goods, floating, all the barges and boats laden, with what some had time and courage to save; as, on the other, the carts, &c. carrying out to the fields, which, for many miles, were strewed with movables of all sorts, and tents erecting to shelter both people and what goods they could get away. O, the miserable and calamitous spectacle! such as, haply, the world had not seen the like, since the foundation of it, nor to be outdone till the general conflagration. All the sky was of a fiery aspect, like the top of a burning oven, the light seen above forty miles round about, for many nights. God grant my eyes may never behold the like, now seeing above 10,000 houses, all in one flame; the crackling, and cracking, and thunder, of the impetuous flames, the shrieking of women and children, the hurry of people, the fall of towers, houses, and churches, was like a hideous storm, and the air, all about, so hot and inflamed, that, at last, one was not able to approach it, so that they were forced to stand still and let the flames burn on, which they did for near two miles in length, and one in breadth. The clouds of smoke were dismal, and reached, upon computation, near fifty miles in length.

"Thus I left it, this afternoon, burning, a resemblance of Sodom, or the last day. London was, but is no more.

"September 4.—The burning still rages, and it is now

* Some accounts say in the morning of September 2. Mr. Evelyn's diary says the evening.

gotten as far as the Inner Temple; all Fleet Street, the Old Bailey, Ludgate Hill, Warwick Lane, Newgate, Paul's Chain, Watling Street, now flaming, and most of it reduced to ashes. The stones of Paul's flew like *grenades*, the melting lead running down the streets in a stream, and the very pavement glowing with fiery redness, so as no horse nor man was able to tread on them, and the population had stopped all the passages, so that no help could be applied. The eastern wind still more impetuously drove the flames forward. Nothing but the Almighty power of God was able to stop them; for vain was the *hero* of man.

"September 5.—It crossed towards Whitehall; O the confusion there was then at that court! It pleased his majesty to command me, among the rest, to look after the quenching of Fetter Lane end; to preserve, if possible, that part of Holborn, while the rest of the gentlemen took their several posts, (for now they began to stir themselves, and not till now, who hitherto had stood as men intoxicated, with their hands across,) and began to consider that nothing was likely to put a stop but the blowing up of some houses, as might make a wider gap, than any had yet been made by the ordinary method of pulling them down with engines; this some stout seamen proposed, early enough to have saved nearly the whole city; but this, some tenacious and avaricious men, aldermen, &c. would not permit, because their houses must have been of the first. It was, therefore, now commanded to be practised, and my concern being particularly for the Hospital of St. Bartholomew, near Smithfield, where I had many wounded and sick men, made me the more diligent to promote it, nor was my care for the Savoy less. It now pleased God, by abating the wind, and by the industry of the people infusing a new spirit into them, that the fury of it began sensibly to abate about noon, so as it came no further than the Temple, westward, nor than the entrance of Smithfield, north; but continued all this day and night, so impetuous towards Cripplegate and the Tower, as made us all despatch; it also broke out against the Temple, but the courage of the multitude persisting, and many houses being blown up, such gaps and desolations were soon made, as with the former three days' consumption, the back fire did not so vehemently urge upon the rest as formerly. There was yet no standing near the burning and glowing ruins by near a furlong's space. The poor inhabitants were dispersed about St. George's-fields, and Moor-fields, as far as Highgate, and several miles in circle; some under tents, some under miserable huts and hovels, many without a rag or any necessary utensils, bed, or boards, who, from delicateness, riches, and easy accommodations in stately and well-furnished houses, were now reduced to extremest misery and poverty. In this calamitous condition I returned, with a sad heart, to my house, blessing and adoring the mercy of God to me and mine, who, in the midst of all this ruin, was like Lot, in my little Zoar, safe and sound.

(To be continued.)

NATURALIA.

ABOUT the month of August the puffin* migrates, and soon afterwards the swift disappears. Young broods of goldfinches are now seen; lapwings and linnets congregate, and the nut-hatch chatters. The mountain-ash now displays its red berries amid its elegant and light foliage, rivalling the flaming honours of the pyracanthus

* Water-fowl.

at a later period. The *jessamine* shews its pretty gentiles—little flowers, and diffuses its fragrant scent. Geraniums are in full bloom; and the genista or broom is covered with flowers. Rue, water-parsnip, horehound, mint, and meadow-saffron bloom in this month. Insects now abound, from the gnat to the butterfly; wasps and common flies are now very troublesome. The ladybird and the glow-worm display themselves; the former is a favourite with children, and the latter is a nocturnal curiosity. The hops now yield to the hands of the pickers, and harvest home is celebrated with glee in many parts of Great Britain.

THE SUN.

THE Sun enters the sign Libra, or the Balance, on the morning of the 23d, when the days and nights are equal throughout the world for that day.

A TABLE OF THE SUN'S RISING AND SETTING FOR EVERY FIFTH DAY.

Sept. 1,	sun rises 13 min. after 5,	sets 47 min. after 6.
6,	.... 23	.... 5, .. 37
11,	.... 33	.... 5, .. 27
16,	.... 42	.... 5, .. 16
21,	.... 51	.... 5, .. 7
26,	.... 1	.... 6, .. 57

HISTORICAL MEMORANDA FOR SEPTEMBER.

On the 8th of this month is kept the Nativity of the Virgin Mary. This festival was appointed by Pope Servius, about the year 695, and was afterwards confirmed by Innocent IV., and Gregory XI. On this day, in 1831, their present Majesties were crowned.

In 1824, on the 9th of September, was the exhumation of King James II. Some workmen, in digging for the foundation of a new church, at St. Germain's, in France, discovered the remains of King James II., of England; they were shortly after reinterred beneath the altar, at the instance and expense of George IV. king of England.

In 1819, on the 13th, died William Smith, an actor on the stage, commonly known by the appellation of Gentleman Smith. He was a man of good education, and some superior connexions.

HOLY CROSS. This festival was first observed on the 14th of this month, in the year 615, by Heraclius the Emperor, who recovered some pieces of the cross, and in memory thereof the Greek Church have a ceremony of kissing the cross on this day.

Louis XVIII., King of France and Navarre, died, aged 88, on the 16th of September, in 1821. During the reign of Bonaparte, he had resided a long time at Hartwell, a seat belonging to the Duke of Buckingham.

SAINTE LAMBERT was bishop of Utrecht, in the time of King Pepin I., but, reproving the king's grandson for his irregularities, he was cruelly murdered at the instigation of an abandoned woman. The festival in honour of this saint was obtained by Robert, bishop of Leeds, September 17th, 1210.

September 21st, is the festival of St. Matthew. About the year 61, St. Matthew wrote his Gospel, in Hebrew, which was afterwards translated into Greek. He was a native of Galilee; and previously to his being called to follow our Saviour, he was a tax-gatherer under the Romans. After many years' labour, he closed his life at Nadabur, in Ethiopia, and it is generally supposed by martyrdom.

* Nightly; in the night.

† Exhumation, the digging up of a body interred in holy ground.

